

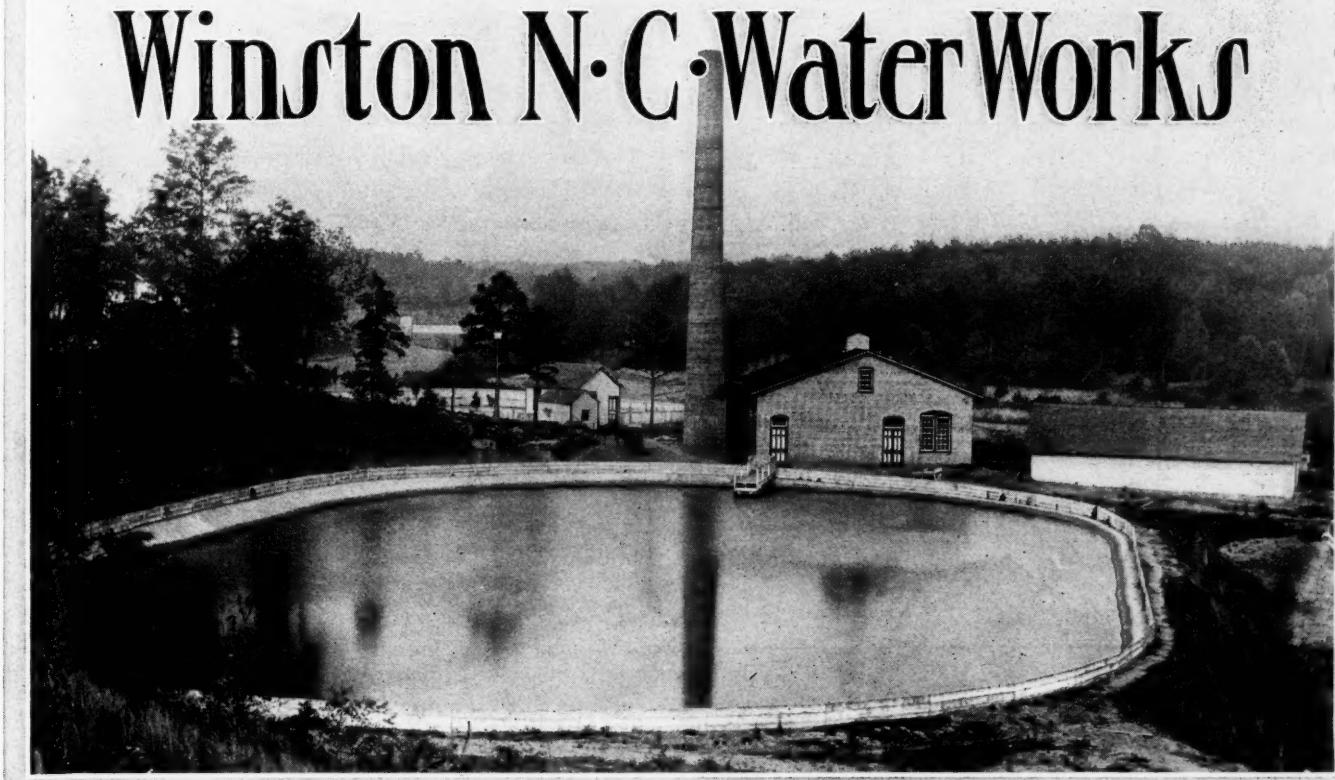
Municipal Journal And Engineer

VOLUME XXIV.

NEW YORK, MAY 27, 1908.

No. 22

Winston N.C. Water Works



CLEAR WATER BASIN AND PUMPING STATION

BY J. N. AMBLER, M. AM. SOC. C. E.

City Engineer and Superintendent of Water Works

DESCRIPTION of the municipal water plant of this city is offered, not with a view of illustrating novelties of design, methods of construction or operation, but because it is believed that this plant is modern in character and typical of the development of a thoroughly adequate water supply to meet exacting conditions in a Southern city of some 18,000 inhabitants.

HISTORICAL

Until the year 1894 a private company supplied water to the city of Winston, deriving its supply from a large well, and the streams feeding Belo's Pond, northwest of the city.

A considerable plant had been gradually built up at this site, consisting of a large brick pumping station, containing two Smith-Vaile compound duplex pumps, and later, a pump driven by a Fritz steel overshot wheel, running on ball bearings.

As the slopes around this plant began to be built up, the water became increasingly impure, until it became necessary to install two Warren filters. With the continued growth of the city this supply became inadequate to meet the maximum demands.

When the city acquired possession it began to look about for an additional source of supply. To obtain one having proved a matter of considerable difficulty, it was proposed to introduce the meter system, with a view of reducing consumption until a greater supply could be developed.

After considerable opposition, meters were finally introduced, and, as is usual in similar cases where the meter system was not introduced at the beginning, the popular dissatisfaction was very great, almost unseating the water commissioners.

Time has proved the wisdom of their course, however, as metering enabled the old plant to last two or three years longer, and leisure was thus given for studying the

question of a new supply, and to develop it into the present excellent plant.

THE PRESENT SUPPLY

Running past the northeastern quarter of the city, and at least a mile beyond its remotest suburb, is a stream known as Frazier's Creek. This stream is fed by numerous tributaries from a drainage area of approximately seven square miles.

The basin thus drained is for the most part timbered with oak and pine forests, with small farms scattered here and there. The population at that time was about thirteen to the square mile, for the most part people of primitive habits, and not amenable to control by the city.

The rainfall is from 39 to 40 inches per annum. Though put into service four years ago, the supply is abundantly adequate at this time, and bids fair to be sufficient for at least fifteen years longer.

A valley was found by J. L. Ludlow, M. Am., Soc. C. E., who designed the plant, where, by building a dam about twenty-five feet high, a reservoir would be made which would hold 100,000,000 gallons, and the plant was designed with reference to this fact.

THE RESERVOIR

An earthen dam, provided with a core wall of concrete masonry and with a heavy rubble spillway and abutments, was put in place. The reservoir site was stripped of timber and vegetable matter, and deepened to at least three to five feet around the edges. A gate house was built at the dam, with means for drawing off the pond at the bottom.



DAM OF IMPOUNDING RESERVOIR

This blow-off has been used after long rainy spells, and by its means the pond has been delivered of immense amounts of roily water, its place being taken by fresh water from the tributary streams.

It would be an improvement to have an intake at the head of the pond to be used immediately after a rain, when the pond is muddy and the branches have cleared up. As this would necessitate a pipe line a mile long, it has never been built.

Although the size of the pond is sufficiently great to give a long period of subsidence, and the good it accomplishes is very marked, particularly in the first two days after a rain, yet the water contains so much finely comminuted clay that it remains in suspension for weeks, and

but for the filters could not be depended upon to give a clear water for long periods of time.

The region is one of the most ancient crystalline rocks, the prevailing rock being mica schist, shading away into gneisses and granites toward the south.

The city owns about one-third of the drainage area, and should own it all, due to the difficulty of controlling it, yet obtaining land from squatter settlers is an extremely difficult and often dangerous enterprise, and it has been felt that they should not be antagonized more than absolutely necessary.

THE WATER

As might be inferred from the character of the "country rock," the water is mild and soft, the temporary hardness running about twenty-five parts per million in terms of calcium carbonate.

The permanent hardness also is low. The suspended matter is usually considerable, giving the water a yellow or tawny appearance. While the pond is large enough to be wind-swept, it is comparatively shallow over most of its area, and in this latitude cannot fail to produce abundant algae growths.

More or less algae are in evidence at all seasons of the year, but particularly in hot, muggy spells which are frequent from May to October.

There is abundant reason to believe that the bacteria in the crude water would be above an allowable figure, and that bacillus coli would be present frequently if not held in check by the filters.

The most dangerous season which we have to contend with is May and June. During these months manurial matter (including human excreta) is spread upon the lands, and the frequent showers wash more or less of it into the pond.

THE ALUM POOL

The water is brought by gravity through a 16-inch main to the station, and passes either directly into the pool or to the filters. Ordinarily, the water runs direct into this pool, which is a basin of 500,000 gallons capacity, partly in excavation and partly in embankment.

This basin is lined with about three inches of concrete, which has no surface coat. As the principal object of this lining was to facilitate cleaning, it has failed largely of its contemplated end. The embankment itself, though of proper width and section, and thoroughly compacted in layers, is composed of a micaceous clay, which slips very easily, and lends itself readily to become a quicksand.

The year after it was built it remained in such a water-logged condition, leaking through its entire surface, that its stability was seriously questioned. It has gradually become clogged with the flocculent precipitate of the alum pool, until now it seems to be safe.

As the water enters this pool it actuates a small turbine placed in the end of the influent main, which runs the "Egyptian Wheel" in the alum house above the pool. By means of this the flow of alum solution is proportioned to the amount of water flowing into the pool.

The alum apparatus consists of four small rectangular vats. The alum is poured into one vat, a half barrel at

a time. It is covered with water from a spigot, and the dissolved alum is allowed to percolate into the second vat through small holes. So far there has been no attempt to regulate the strength, though the solution must be nearly saturated.

It is drawn into the third vat at will, and sufficient water added from a tap to make the solution hold a Baumé hydrometer at a convenient mark. It is then ready to be run into the fourth vat, in which is placed the Egyptian Wheel. As the water runs by gravity from the third to the fourth vat, it would overrun the latter but for a hollow float ball closing the admission valve when full.

Knowing the amount of water filtered each day, and the amount of alum used, the amount per gallon can be determined, and the arms of the Egyptian Wheel opened or closed, or the strength of the solution changed. In this way the regulation can be kept to within about one-fourth grain per gallon.

A similar apparatus, though less elaborate, for admitting lime to the influent main in times of low alkalinity of the water is in the same building.

The building, which is built on brick piers over the pool, holds a considerable supply of these chemicals.

The influent main enters the pool in a chamber planked up tightly almost to the surface. As the stream of alum solution is admitted into this chamber at the same time, considerable coagulation occurs here, and much of the mud is permanently deposited in the chamber.

The water, thus relieved of part of its load, rises and flows over the top of the chamber to the main body of the pool.

A longitudinal baffle board extends from this chamber almost to the other end of the pool, causing the water to take a circuitous path, and thus give further time for coagulation and precipitation of suspended matter.

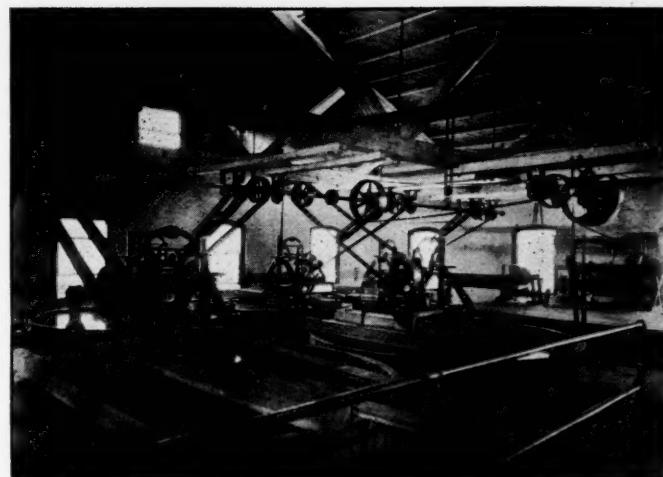
When the water has returned on the far side of the pool it flows over the lip of a weir at a little below water level, and thus enters the pipe leading to the filters, having left by far the greater part of the mud and organisms on the bottom of the pool. At this stage the water has been very materially clarified, yet is full of "floc" and usually too muddy to be acceptable.

THE FILTERS

These are of the Warren gravity type, working under low head. The old plant had only two units, each of 250,000 gallons capacity in twenty-four hours. When the new plant was installed two more of the same size were added, giving the plant a nominal capacity of 1,000,000 gallons in twenty-four hours.

Due to the constant presence of algae, and probably some deterioration from use, these filters could not be depended upon to deliver more than about 700,000 gallons in twenty-four hours, without opening the influent gate so wide that normal conditions were destroyed, and the effluent was thereby made unsatisfactory.

As the daily consumption averages about 630,000 gallons, and the maximum is 1,000,000, it may be seen that the city had outgrown the capacity of the filters. This was particularly apparent when it was attempted to clean



WARREN FILTERS AND OPERATING MECHANISM

out the alum pool and clear water basin. At such times, particularly if in summer, the consumption was so near the filtering capacity that it was impossible to regain the lost water and fill these basins without calling on the sister city of Salem for assistance.

Therefore, two new units of the same type, but aggregating 720,000 gallons, have just been installed. With their aid it is possible to filter at a normal rate, and handle any emergency; the effluent, also, is particularly clear and sparkling.

When the works were placed in the writer's charge January 1, 1907, it was found that one-half grain of alum per gallon was the usual practice. After experimenting several months, and sending samples in sterilized bottles monthly for chemical and bacteriological examination to the State Laboratory of Hygiene, it was found that a proper bacterial efficiency could not be maintained at all times with this amount.

The conclusion was reached that while one-half grain was often sufficient to clarify the water, its purity from organisms could not be maintained with less than one grain per gallon, and since then this amount has been regarded as a minimum.

Frequent tests of the alkalinity of the water are made in the water works office, using the erythrosine method. These tests are a guide as to the maximum amount of alum that may be used without causing acid reaction. One grain of alum is counted as neutralizing eight parts per million of alkalinity, and an endeavor is made never to have a smaller margin than five parts per million of alkalinity.

It should not be inferred that the maximum amount of alum which the water will neutralize is used. Other considerations, in which observation and experience in treating this water have a part, govern the amount between these limits to be used at any time. For some months past one and a half grains to the gallon has been used, and has given excellent results.

We are now approaching the most critical season of the year, the months of May and June. At this season, with manurial matter spread on the farms, with frequent showers and several long rainy spells, the pond becomes polluted to a considerable extent. The hot spells between

favor prolific growths of algae. The heavy rains reduce the alkalinity in the water at the very time when more is needed to neutralize an increased amount of alum.

On such occasions last year, the filters being more or less obstructed with algae, the effluent had a pearly look, and a musty odor, indicating imperfect action of the filters.

Preparations have been made to meet this condition during the coming season. The new filters will enable the water to be filtered at a low rate, and hence more perfectly.

The recently installed lime apparatus will enable us to increase the alkalinity of the water if suddenly demanded, when rains have made it low. A gasoline launch has also been purchased, which will allow of the more rapid and uniform application of copper sulphate to the pond. The clear water basin and alum pool have just been thoroughly cleaned, and the old filters sterilized with both caustic soda and live steam. The sand also was boiled in this solution by a steam jet.

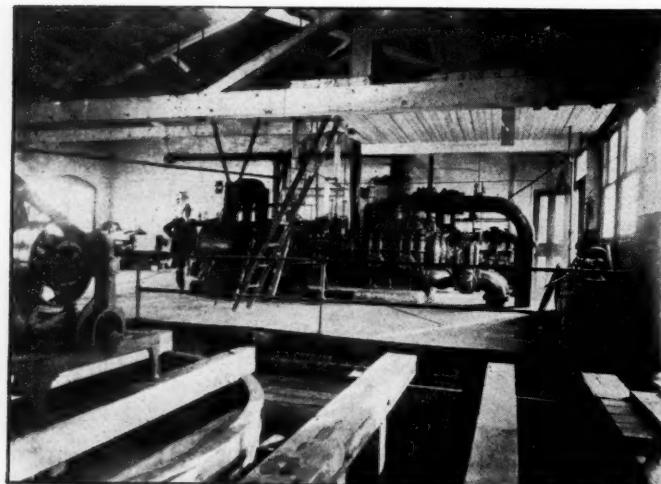
TREATMENT FOR ALGAE

While algae are always present, as is shown by the fact that the filters cannot be run to normal capacity, they do not increase to such an extent as to seriously interfere with the work except in very hot spells. On such occasions, almost without an hour's notice, the filters begin to flood over the tops, due to clogging of the sand by these organisms, of which *anabaena* is believed to be the most serious offender.

At such times an application of 800 pounds sulphate of copper, applied by dragging in a bag from the rear end of a boat rowed back and forth over the entire pond, will change this condition in a few hours, though the dead algae will continue to clog the filters for a day or two.

On only one occasion during the past year has it been necessary to use this much copper, which, however, is less than one-millionth part of the water. If taken in its inception, an application of 400 pounds, or less than one two-millionth part, is sufficient.

At the beginning of such a spell a smaller application



MCGOWAN PUMP, 2,000,000 GALLONS CAPACITY

dragged around the edges and shallow reaches of the pond has seemed to prevent the enormously rapid growth of these organisms.

OTHER EQUIPMENT

A McGowan pump of 2,000,000 gallons capacity in twenty-four hours, of the compound duplex type, and the two Smith-Vaile pumps, each of 500,000 gallons capacity, all connected to a Worthington surface condenser, constitute the pumping outfit. There are three large boilers of the horizontal return tubular type, fed by gravity from the force main. These are fitted with two closed feed-water heaters of the water-coil type. A standpipe 25x80 feet and some 80,000 feet of mains from 12 inches to 2 inches in diameter, with 186 hydrants and a large number of gate valves, constitute the distribution system. About one-third of the service is metered.

City Lighting at Little Rock

In his annual report for 1907, the City Electrician of Little Rock, Ark., states that the plant at present consists of one 350-horsepower Stirling water-tube boiler three years old; two Hamilton-Corliss engines rated at 125-horsepower each, one fourteen and the other twenty years old; and four Wood arc dynamos with a capacity of ninety 2,000-candlepower $6\frac{1}{2}$ -ampere lamps each, these dynamos being six years old. About seventy miles of wire in the circuits feed 330 Wood enclosed, series, $6\frac{1}{2}$ -ampere, direct-current, arc lamps, nominal 2,000-candlepower. He recommends that as soon as possible at least 100 more lamps be placed in service, requests for them being received from all parts of the city. The total cost, including the building and the reconstruction of the plant, was \$68,045.43.

During the year the plant was operated 2,858 hours, or 546 more than moonlight schedule, these being cloudy nights. There were thirteen interruptions of service. Three of these were from broken wire in circuits, three from cross-wires; four from broken wire in armatures; two from the feed pump being out of order and one from the failure of a lamp. Two hundred and ninety outages were reported, few of which were out more than a few minutes after being located or reported to the plant.

The expenditures during the year totaled \$12,883.49, the largest items of which were: Payroll, \$5,565.40; coal, \$3,844.01; carbons and electric supplies, \$556.76; construction, \$1,024.75; reconstruction, \$924.43; oil, miscellaneous supplies, insurance and horseshoeing and feed making up the balance. These figures show an average cost per lamp per year of \$39.04. It is seen that of the above, \$1,949.18 was spent on new construction and reconstruction, this being a little over 3 per cent. of the cost of the plant, which might be deducted from any allowance made for interest and depreciation. Such allowance would probably call for an addition to the account of about \$4,000, making about \$17,000 total, which would give the cost per lamp per year as about \$51.50.

STRENGTH OF CEMENT AND CLAY PIPE

Paper Read Before the Iowa Association of Cement Users,
Giving Results of Tests—Ten to Twenty-four Inch Pipe
Tested—Discussion of Results

BY PROF. A. MARSTON,

Dean of the Engineering Department, Iowa State College, Ames, Iowa

THERE is no one drainage question concerning which the Engineering Experiment Station at Ames is receiving so many inquiries at the present time as the relative merits of cement and clay drain tile. All over the State people are desirous of knowing whether the cement tile are strong enough to withstand the handling they are necessarily subjected to in hauling and laying and the pressures which they must sustain in the ditch after laying. The question of resistance to disintegration from effects of freezing and thawing and other destructive agencies is another subject of frequent inquiry.

In the past we have been compelled to admit our inability to give conclusive answers to the inquiries we receive. We have still in satisfactory use on the college campus a sewer made of cement pipe at least twenty-five years ago, and we firmly believe that it is entirely practicable to manufacture cement drain and sewer pipe of a most satisfactory quality. We also believe that it is dangerous to entrust the manufacture of such pipes to inexperienced or careless or unreliable persons.

We would like long since to have had the Engineering Experiment Station take up careful scientific investigations to help and guide in the development of this new industry. Such work is the purpose for which the Engineering Experiment Station was established. However, our total annual appropriation is only \$3,500, and this has to be divided between so many pressing lines of work that we have been unable to accomplish what we desired.

In the effort to make this fund reach as far as possible in the securing of results, we last year interested two of our senior civil engineering students in this subject of tile drains. From a few manufacturers in the State we secured samples of their product, and the tile and sewer pipe factories also kindly furnished samples of their wares. In addition, we employed an experienced tile maker to supervise and assist in the manufacturing of cement tile made especially for the purpose of this investigation. The senior civil engineers mentioned are M. A. Mills and Robert Moles, who manufactured all the pipe made at Ames, and who constructed testing apparatus and who personally made all the tests given in this paper, except those for the age of eleven months. They also made sufficient cement tile to permit tests to be made at two additional ages. Hence, in the end, we shall obtain the strength up to the age of at least two years.

Standard Method of Testing Tile and Sewer Pipe.—At present no standard method of testing tile and sewer pipe has been adopted by laboratories. Hence, in the beginning of this investigation it became necessary to devise a method of testing, which, while reproducing as nearly as practicable the actual conditions under which the pipe are

to be used, would be capable of exact duplication in different laboratories and by different investigators.

As tile and sewer pipe are actually used in the ditch, the bottom of it does not exactly conform to the lower half of the pipe, and there is a tendency for the earth to settle away from the under side at the outer portions, leaving the pipe unsupported there. At the mid-diameter, in a narrow ditch, or with careless tamping, there is also a lack of support from the earth filling. The load comes upon the upper half of the pipe from the weight of superincumbent filling, but this will receive some support by friction against the sides of the ditch.

After careful consideration of these conditions, it was decided that the best standard method easily capable of duplication in any laboratory and which should approximately represent actual service conditions, would be to bed the lower portion of the pipe for one quarter of the entire circumference in sand, retained firmly in place by a heavy frame work of timber, and to apply the load to the upper portion through a similar bed of sand, extending one-fourth of the entire circumference of the pipe, and all held in place by a heavy frame work of timber. A thickness of cloth or canvas was used to prevent the sand from escaping between the edge of the upper frame work and the pipe. The pressure was applied to the upper surface of the bed of sand, and not to the upper frame work. There was no danger, therefore, of concentrated pressure coming upon the pipe through contact with the upper frame.

The tests were made on a 100,000-pound Transverse Riehle Testing Machine.

General Plan of Investigation.—As already stated a number of samples of drain tile were secured from manufacturers as representative of their product, in the case of both cement and clay. The cement tile so obtained ranged from 4 inches to 12 inches. The clay tile on the other hand ranged from 4 to 24 inches internal diameter. Besides testing the above samples obtained from manufacturers, it was thought desirable to manufacture some cement tile, so that accurate information would be available as to the proportions of sand and cement and all other features of the manufacture.

A 1-3 mixture was adopted for these tile. The material was of good, coarse sand, containing some small pebbles. The tiles were made in Miracle molds by the ordinary dry process, the details being directed by an experienced tile maker. The work was done in the month of March, in the basement of one of the college buildings which was under construction. The tile were protected against freezing, but were not kept at a very high temperature. They were kept thoroughly sprinkled with water until set hard.

The internal diameters of tile manufactured were 12, 18 and 20 inches respectively.

After making a complete set of tile of the regular thicknesses provided for by the Miracle molds, these molds were remodeled in our shops and a second set of tile manufactured, having about one-half inch greater thickness of shell than the first.

Enough tile were made to enable two of each thickness of shell to be broken at the respective ages of two months,

eleven months, two years, and three years. Only the two months and eleven months tests have been made as yet.

Results of Tests.—The results of the tests are shown in Tables 1 and 2 herewith.

In these tables c=cement, l=length, s=sand, d=diameter, t=thickness.

TABLE I
Tests of the Strength of 12-inch to 20-inch Cement Drain Tile

	PROPOR.		DIMENSIONS			Str. Load 2 Months	Per Lin. In. 11 Months	Remarks
	C	S	L	D	T			
Made at Ames by Mills & Moles	"	"	24"	20"	2 $\frac{1}{4}$ "	89	69	Cracked.
	"	"	"	"	1 $\frac{1}{4}$ "	73	...	
	"	"	"	"	1 $\frac{1}{4}$ "	68	142	
	"	"	"	18"	2 $\frac{1}{4}$ "	70	175	1 $\frac{1}{4}$ " shell.
	"	"	"	18"	2 $\frac{1}{4}$ "	115	315	2" shell.
	"	"	"	18"	2 $\frac{1}{4}$ "	141	299	2" shell.
	"	"	"	18"	2 $\frac{1}{4}$ "	109	221	1 $\frac{1}{4}$ " shell.
	"	"	"	12"	2"	79	81	Cracked.
	"	"	"	12"	2"	116	365	
	"	"	"	12"	2"	155	470	2 $\frac{1}{4}$ " shell.
	"	"	"	12"	2"	135	181	
	"	"	"	12"	2"	99	218	
	"	"	"	12"	2"	95	...	
	"	"	"	12"	2"	125	...	
	"	"	"	12"	2"	58	...	Under-tamped.

TABLE II
Tests of the Strength of 10-Inch to 24-Inch Clay Drain Tile

MADE AT	Degree of Fusion	DIMENSIONS			Load, Lin. In.	Remarks
		L	D	T		
Des Moines.	Vitrified.....	24"	24"	2 $\frac{1}{4}$ "	318	
" "	"	"	18 $\frac{1}{2}$ "	1 $\frac{1}{4}$ "	212	
" "	"	"	"	"	187	
Mason City.	Semi-vitrified..	27	"	1 $\frac{1}{2}$ "	96	Badly checked.
" "	"	"	17 $\frac{1}{2}$ "	1 $\frac{1}{2}$ "	89	Checked.
" "	"	"	15"	1 $\frac{1}{2}$ "	64	Badly Checked.
Des Moines.	Vitrified.....	12"	12"	1 $\frac{1}{2}$ "	103	
" "	"	"	"	"	168	
Mason City.	Semi-vitrified..	"	"	1 $\frac{1}{2}$ "	117	
" "	Soft Burned....	"	"	1 $\frac{1}{2}$ "	166	
Storm Lake.	"	"	10"	1"	158	
					98	

DISCUSSION OF RESULTS

Increase in Strength of Cement Tile With Age.—In attempting to draw conclusions from the above results, it should be remembered that tests of clay and cement materials show large variation, due to unavoidable differences in manufacture, and hence too much reliance should not be placed upon the results of so small a number of tests as are given in the above tables.

Perhaps the most striking feature in connection with these tests is the great increase of strength from 2 months to 11 months in the age of the cement tile manufactured at the college. In this connection it should be remembered that the weather was cool during the first two months these were cured.

The increase in strength is shown in Table III.

TABLE III

Per Cent. of Increase in Strength of Cement Drain Tile Between the Age of 2 Months and 11 Months

Diameter	Increase
20-inch, thin.....	130%
18-inch, thick.....	140%
18-inch, thin.....	136%
12-inch, thick.....	205%
12-inch, thin.....	71%

One good quality of cement drain tile is that they continue to increase in strength after first manufactured. Unfortunately, however, the heaviest pressures come upon them soon after laid. It would seem wise, therefore, to use cement tile very soon after manufacture.

The only comparison between cement and clay drain tile which we feel warranted in making at this time is in the case of the cement tile manufactured by ourselves. A comparison of the tests of these tile with those of corresponding diameter of clay tile is hereby given in Table IV.

TABLE IV
Comparative Average Strength of Cement and Clay Drain Tile

Internal Diam. Ins.	1:2 CEMENT TILE						CLAY TILE		
	AGE 2 MONTHS			AGE 11 MONTHS			No.	Thick. In.	Str. per Lin. In.
	No.	Thick. In.	Str. per Lin. In.	No.	Thick. In.	Str. per Lin. In.			
24	...	...	...	...	...	...	1	2 $\frac{1}{4}$	318
20	2	2 $\frac{1}{4}$	81	2	1 $\frac{1}{2}$	159	...	...	...
20	2	1 $\frac{1}{4}$	69	2	1 $\frac{1}{2}$	307	...	...	...
18	2	2 $\frac{1}{4}$	128	2	2	222	2	1 $\frac{1}{2}$	200
18	2	1 $\frac{1}{4}$	94	1	1 $\frac{1}{2}$	417	1	1	103
15	...	...	...	...	...	...	1	1	158
12	2	2	137	2	2 $\frac{1}{4}$	200	3	1 $\frac{1}{2}$	141
12	2	1 $\frac{1}{2}$	117	2	1 $\frac{1}{2}$	...	2	1 $\frac{1}{2}$	...

A study of this table will convince anyone that it is feasible to make cement drain tile which will attain all necessary strength and which will compare very favorably in this respect with clay tile. However, no one should place too much dependence on the small number of tests represented in Table IV.

Conclusion. In conclusion, the writer may present the urgent need for an extensive and systematic series of scientific tests of cement drain tile. There should be a series of tests to determine the actual pressure coming upon tile under working conditions; also different percentages of cement should be tried in the manufacture and the strength of the resulting product determined. Different thicknesses of shell should be studied in the same way and different methods of manufacture. The effect of age is another important feature. Finally, as a result of such tests and of practical experience, a standard set of specifications for the manufacture of cement drain tile should be prepared and adopted.

Lift Bridge at Cairo, Egypt

THAT modern improvements for expediting street traffic, and the conditions calling for such, are by no means confined to this country is illustrated by a contract recently let by the Egyptian government for a bridge across the Nile at Cairo which, in contrast to some of the old, slow-moving swing bridges, is designed to open or close in less than 30 seconds, this result being obtained by the use of the most modern electric equipment. This rapidity was desirable because the crossing occurs at a point in the metropolis where the traffic is considerable, the bridge leading direct to the site where the Boulaq Museum stood. The total length between abutments will be 900.6 feet; the total width, 59 feet, of which 9.84 feet are allotted to each of two foot paths, 16.4 to a double street railway line, and 22.97 feet to a wagon roadway. There will be four fixed approach spans and a movable 98.43-foot span, which will be of the Scherzer rolling lift bridge type. The piers and abutments will be constructed of granite on foundations sunk by compressed air. The bridge is estimated to cost more than \$1,500,000.

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It is also desired that the facilities furnished by the reference library in this office should be widely known and freely used by those interested in municipal affairs. Visitors will be welcomed and provided with conveniences for search, and inquiries by mail will be promptly dealt with.

REMOVAL NOTICE

The office of the Municipal Journal and Engineer on July 1 will be removed to the Thirty-ninth Street Building, 239 West Thirty-ninth street, New York City.

MAY 27, 1908.

CONTENTS

Winston (N. C.) Water Works. (Illustrated.) By J. N. Ambler, City Engineer and Superintendent of Water Works	659
City Lighting at Little Rock.....	662
Strength of Cement and Clay Pipe. By Prof. A. Marston.....	663
Lift Bridge at Cairo, Egypt.....	664
Ohio Stream Pollution Law.....	665
Approval of Efficient Public Service.....	665
News of the Municipalities.....	666
Legal News—A Summary and Notes of Recent Decisions.....	672
Municipal Appliances. (Illustrated).....	673
News of the Societies.....	674
Personals	675
Trade Notes	675
The Week's Contract News.....	676
Patent Claims	689
Incorporations	689

Ohio Stream Pollution Law

In an editorial in our April 29th issue we made casual reference to Ohio's new law concerning stream pollution. As there stated, it is, in general, similar to the laws of Pennsylvania and New York, but is differentiated

from these by the provision that each town has a right to appeal from the State Board of Health to an arbitration commission, composed of one engineer chosen by the town, one chosen by the Board of Health, and a third, if necessary, chosen by these two. This is an unusual feature which indicates an effort on the part of the Commission to avoid all appearance of arbitrariness, which it is hoped will lead to cordial relations between it and the cities of the State and to this extent serve to lubricate the wheels of progress.

The Chief Engineer of the State Board of Health, R. Winthrop Pratt, in a recent letter referring to this editorial, takes exception to our "indirectly classing the new Ohio law among 'unusual and stringent methods,' whereas we have endeavored in drafting this law to eliminate the stringent and drastic methods which have hindered progress in other places." The words, "unusual and stringent" are perhaps somewhat misleading, but were not our own, being used by E. B. Goodell, in the government report referred to, to describe the laws of New Jersey, Pennsylvania, Massachusetts and New York—States which are now, under these laws, making much progress in their anti-pollution crusade. In fact, we interpreted "unusual" to apply to the fact that they do secure results, and not at all as a term of disapproval; and trust that in this sense the Ohio law will be still more unusual.

Approval of Efficient Public Service

We commend to the consideration of civic societies and other citizen organizations the following from the annual address of President H. N. Davis of the Civic League of St. Louis, delivered a few weeks ago. After reporting that certain committees of the League had approved of the work of the respective city officials, he said: "It [this approval] simply means that these officials have taken hold of their work in the spirit which the committee believes to be the right one, and are making the improvements as rapidly as circumstances will permit. If I understand aright the purpose of the Civic League, it is to express, without hesitation but in a strictly non-partisan spirit, its warm approval of efficient public services." So many citizen organizations differ from partisan ones chiefly in "knocking" officials generally rather than those of the opposite party only, that we note with pleasure the purpose of this one to "express its warm approval of efficient public services." The hammer and muck-rake, crossed, on a vert background is not a suitable coat of arms for a civic society. Rather would we suggest a figure of Justice, with an executioner armed with a ballot box (and possibly a referendum) in the background, with the following inscription on the reverse side:

"I will not hastily find fault with the city officials. They are probably doing their best, and if they are not satisfactory I am to blame for electing incompetents. If they are *not* doing their best, but the city, I will not speak in haste and forget at leisure, but will first count one hundred—then twenty-three."

NEWS OF THE MUNICIPALITIES

Divers Subjects of General Interest and Their Treatment by City Councils and Officials—Streets, Water Works, Lighting and Sanitary Matters—Police and Fire Items—Government and Finance

ROADS AND PAVEMENTS

Dispute Over Street Railway

Allentown, Pa.—The Highway Committee of the City Councils is endeavoring to adjust the matter of repairing Lehigh street, which is covered with Warren Brothers' Bitulithic paving. The Lehigh Valley Transit Company has a single track of T rails without concrete foundation on that street. The street has a grade of about six feet in the hundred. The pavement is broken between and along the rails, while the rest of the street is in good order. Many attempts to repair the defects have been unsuccessful, as the movement of the rails especially at the joints soon breaks the pavement. Warren Brothers have offered to relay the pavement if the Transit company would relay the tracks. The Transit company has refused to do this, and the Councils have so far upheld them. The paving company has refused to relay the paving in the present condition of the tracks.

Labor Union Indorses Municipal Paving

Bridgeport, Conn.—The plan of Mayor Henry Lee, of having the city purchase materials and lay its own paving instead of having it done by private contractors, has been indorsed by the Central Labor Union.

Confusion in Street Repair Accounts

Buffalo, N. Y.—Instead of approving an appropriation of \$100,000, Mayor J. N. Adam has sent a communication to the Board of Aldermen on the subject of repairs to asphalt pavements. He complains that the expenditures for repairs are made without reference to the amount of the appropriation—sometimes they exceed the sum appropriated and sometimes they fall below it. As the prices for repairs are bid on separately each year, a good deal of confusion as to prices paid for work has resulted. The Mayor requests observance of the law that one year's bills shall not be paid out of another year's appropriation. Incidentally, he mentions that he would like to see the city undertake its own repairs.

Street Improvements in Dallas

Dallas, Tex.—Mayor S. J. Hay has received the annual report of City Engineer Leon Dalton, recently resigned, for the year ended April 30. Of sanitary sewers, there were laid 69,454 feet of pipe, including 215 lamp poles and 36 manholes, at a cost of \$40,673.99. The year's work brought the total feet of sewers laid to date up to 583,821. Of storm sewers, there were laid 16,946 feet, bringing the total of storm sewers up to 66,751 feet. Street improvements included 55,435 square yards of brick, 103,432 square yards of bitulithic, 121,326 square yards of asphalt, 31.06 miles of macadam, 5.64 miles Bois d'Arc, 5,952 square yards of pure bitumen.

A Problem in Pavement Maintenance

Scranton, Pa.—Plans are being formed for taking care of the maintenance of asphalt pavements after the present guarantee with the Barber Asphalt Company has expired. For the last ten years the city has been paying the company \$17,520 a year—about 7 cents a square yard—for keeping the pavements in order. Now there are 52,916 yards more to maintain than there were a few years ago—the present total being 286,832 yards. For this work, the Barber company wants \$20,000 annually. The city might be willing to pay the old lump sum figure which would amount to 6 cents per square yard a year. Rather than pay the higher price, the city will build an asphalt repair plant of its own, or let a contract for so much a square yard for work actually done.

Mayor Wants Best Location for Paving Plant

Pittsburg, Pa.—Condemnation proceedings will be resorted to, if Mayor George W. Guthrie has his way, for acquiring a site for the city's asphalt plant. The only desirable location offered to the city is held at \$175,000, a sum far in excess of its assessed valuation and the price for which it was bought a few years ago. As the Mayor's idea in establishing a plant was to reduce prices of paving, and as it is the intention to do extensive resurfacing, a location must be selected which will make the cost of hauling as low as possible. In patching, work has been done for 25 per cent. less than contract prices, and an effort will be made to see if a reduction can also be made in the cost of new work. A Council committee, of which Jacob Soffel is chairman, has been appointed to recommend sites.

Rebates for Thin Paving

Trenton, N. J.—As a result of a conference between the officers of the city and representatives of the Barber Asphalt Paving Company, the city will accept \$2,250 in settlement of its claim against the company for alleged faulty paving on eight streets. The city will turn over to the company the amount, about \$30,000, held back pending adjustment of the shortage in material. The experts' report, on which action was based, was to the effect that the pavements were good, but that in some places the company had not laid the asphalt two inches thick, as required by the specifications.

Engineer Thinks Specifications Too Rigid

Rochester, N. Y.—According to City Engineer Edwin A. Fisher, who has had tests of paving brick made in the laboratories, very few brands of paving brick would stand the test prescribed by an ordinance recently passed. He is inclined to think that the requirements will make brick paving too expensive. According to the ordinance, all brick must come up to the following requirement: Abrasion, 18 per cent.; absorption, 2 per cent.; the bricks shall be exclusive of lugs or projections of any kind and not less than 3½ inches wide, 4 inches deep and 8¾ inches long, but a variation of not more than ¼ inch may be allowed.

Ordinary Gas Tar Used On Roads

Holyoke, Mass.—Last year the Board of Public Works experimented in a small way with a form of pavement, laying the same as an ordinary macadam road is laid, except the top or wearing surface, which was treated with a preparation of hot tar procured from the municipal gas plant. An opinion has been expressed by some of the automobile owners of the city, who represent large corporations, that one of the streets thus laid was as good a road as they have ridden over. Figures show that the cost of this work was about \$0.5829, \$0.5678 and \$0.6152 per square yard. It is proposed to continue this work the coming summer. The experience of the Board has been that whatever work of this nature is done should be done during the hot weather, as the conditions of nature are more favorable to the work.

Mayor's Veto of Paving Resolution Sustained

Grand Forks, N. D.—The State Supreme Court has upheld former Mayor George E. Duis in his action in vetoing the resolution of the City Council awarding a contract for paving a street with creosoted blocks to the Kettle River Quarries Company. The company claimed the Mayor had no power to veto the resolution. Council will take the paving matter up at once, so that the work can be finished this year.

SEWERAGE AND SANITATION

Troublesome Drainage Problem

Baltimore, Md.—A house drainage problem has arisen in the annexed territory, where, on account of the low tax rate guaranteed when annexation took place, funds have not been available for sufficient public sewers. Property owners are between the horns of a dilemma. The Health Department threatens them with prosecution for lack of sanitary drainage, while, on the other hand, they are shut off from making connections with streams that would carry off the sewage by intervening private property. In one instance, \$200 was offered a man for the privilege of running a drain across 75 feet of his property.

Sewers Half Full of Dirt

Dayton, O.—That the sewers of Dayton are badly clogged up is evidenced by the investigation made by members of the Southeastern Improvement Association. Some of the measurements they obtained were as follows: An 8-foot sewer, 64 inches open, 32 inches dirt; a 7-foot sewer, 43 inches open, 41 inches dirt; most of the sewers had 32 inches open and 52 inches dirt. The average of all figures showed that the sewers were about half full of dirt. These observations bear out the general statement of City Engineer Cellarius made some time ago to Council that the storm water sewers were in a deplorable condition. The Engineer estimated that it would take \$15,000 to clean all the sewers and \$10,000 annually thereafter to maintain them.

Sewage Purification in Pennsylvania

McKeesport, Pa.—The special committee of city officials who visited Harrisburg recently to confer with the State health authorities regarding the discharge of sewage into rivers has reported the results of the conference to Council. It is the determination of the State officials to force sewage purification as soon as circumstances warrant. As this will necessitate a separation of house and storm sewage, permits for no more combined sewers will be granted. On application, permission will probably be granted for the further discharge of sewage into the Monongahela river for a period of three years, when a disposal plant must be built. Authority will not be granted to discharge water into the Youghiogheny river above the water works intake.

Louisville Sewage Contaminates Water Supply

New Albany, Ind.—John S. Macdonald, representing the New Albany Commercial Club, has addressed a letter to Mayor Jacob Best in which he urges the city authorities to take decisive steps to abate the contamination of the Ohio river above the New Albany water works intake by the sewage of Louisville. He suggests that it would be well for the City Council to adopt a resolution protesting against the contamination and at the same time take the matter up with the Indiana State health authorities, through Dr. J. N. Hurty, Secretary of the Board of Health.

Tuberculin Tests to Be Used Discreetly

Albany, N. Y.—R. A. Pearson, the new Commissioner of Agriculture, has issued a statement to the effect that he does not believe in the indiscriminate use of the tuberculin test for cattle. Much can be accomplished by physical examination and the department will make the fullest possible use of this method of diagnosis. Personally the Commissioner believes in the Bang system of eliminating tuberculosis from herds. According to this system tuberculous cows are not killed, but are kept separate from the rest of the herd. Calves of tuberculous cows are fed on sterilized milk, so that in the course of a few years the disease may be eliminated. Under Mr. Pearson's administration special pains will be taken to see that cattle are kept in clean and sanitary stables. The crit-

icisms of the Department's former policy by the officials of Massachusetts and Connecticut seem to have made a deep impression upon his mind, and he intimates that he has determined to reform the entire system of supervision over the dairy and general live stock interests of the State, lest those interests suffer loss of business in neighboring States.

Private Sewers to Be Investigated

San Antonio, Tex.—Mayor Bryan Callaghan has named a committee to investigate the private sewers that have been built and operated for many years, most of them without the formality of a permit. The matter was brought up by frequent complaints from property owners in the sections where these sewers existed, of the high charges made for the privilege of making connections. According to the view held in the City Engineer's office, a large per cent. of the sewers are trespassers in the public streets.

Police Powers for City Health Officers

Norfolk, Va.—The Board of Health has adopted a regulation favoring the granting of necessary police powers to City Health Officer Dr. F. S. Hope and Sanitary Inspector Menden for the purpose of enforcing rigid quarantine in cases of contagion of any nature.

WATER SUPPLY

A Question of Supplying Outside Consumers

Atlanta, Ga.—A difference of opinion on the advisability of supplying water to consumers outside of the city limits has arisen between Mayor W. R. Joyner and officials of the Water Board. Having in mind the scarcity of water at a recent fire, the Mayor wrote to President Frank G. Lake of the Water Board, stating that in his opinion the city water works should first take care of every interest in the city before it supplies corporations or individuals outside the city. It seems that, according to the city code, the Water Board has full authority to regulate the distribution and use of water. There are about 300 outside customers, some of them manufacturing corporations, consuming altogether 4,000,000 gallons a month. These customers pay about twice the city rates, and for that and other reasons the Board wishes to continue their supply. Besides, the shortage at the fires was rather a matter of too small mains than limited quantity of water. Proceedings are already under way for replacing the small mains with larger ones.

Water Consumption of Metropolitan District

Boston, Mass.—The monthly report of the Metropolitan Water Board, giving the consumption of water during April, shows that Malden, as usual, uses the smallest quantity per capita. The number of gallons per capita are as follows: Boston, 156; Somerville, 85; Malden, 43; Chelsea, 132; Everett, 77; Quincy, 87; Medford, 95; Melrose, 93. The city of Chelsea shows a jump of from 3,583,100 to 5,155,300 gallons daily. This increase was due to the fire, not only on account of water used on the fire, but because of waste caused by broken pipes in burned buildings.

Honolulu's Water System

Honolulu, T. H.—The city is for the first time receiving water from the new Nuuanu Valley reservoir which has been in process of construction for nearly three years past and which has cost about half a million of dollars. The work on the big Nuuanu Dam will not be finished before fall, but has progressed so far that several millions of gallons daily can be supplied the city from it. When finished the reservoir will not only furnish the city with water, but will furnish power sufficient for lighting the city for years to come and operate all machinery of public utility character.

Suitable Water Supply Found

Burlington, N. J.—As a result of his investigation of the possible sources of improved water supply for the city of Burlington, C. C. Vermeule, State Topographer, has reported that there are two general sources: the first is the Delaware river, properly filtered, and the other, ground water from driven wells or springs. If properly developed, the ground water supply near the city is capable of furnishing at least five million gallons each twenty-four hours. The most desirable location for the supply is the basin of the Sylvan Lakes. The elevation is sufficient to permit delivering by gravity to the present pumping station. Analysis of the water shows it to be of excellent quality.

Ligonier Adopts New Meter Rates

Ligonier, Pa.—Council has adopted the following schedule of meter rates: For 500 gallons a day, \$.18; 1,000 gallons, \$.17; 2,000, \$.14; 5,000, \$.115; 7,500, \$.105; 15,000, \$.095; 20,000, \$.09; 30,000, \$.085; 40,000, \$.08; 60,000, \$.075; 80,000, \$.07; 100,000, \$.0675; 120,000, \$.065; 140,000, \$.0625; 160,000, \$.06.

Water Analysis to Avert Typhoid

Springfield, O.—On motion of Dr. R. C. Rind, the Health Officer has been authorized to have the city water analyzed once a month during the summer. Steps will also be taken to have all the wells closed. Dr. Rind said that his attention had been called to the need of special care regarding drinking water by the conditions prevailing in Columbus, where there are 72 cases of typhoid fever.

STREET LIGHTING AND ELECTRIC POWER

Wants More Uniform Voltage

Memphis, Tenn.—The committee appointed to investigate the charges of the City Electrician against the lighting companies to the effect that poor lamps were being installed and that the consumer was being forced to pay for an excessive voltage not only useless but destructive, has made a report to Councils. It concurred in opinion with the Electrician's statements, and included a resolution that the Memphis Consolidated Gas and Electric Company be forced to supply better and more modern lamps and that it be required to supply a uniform voltage.

Tungsten and Tantalum Lamps for New York

New York, N. Y.—At the resumption of the investigation of the electric lighting companies by the Public Service Commission, representatives of the New York Edison, the United Electric & Power, and the Brooklyn Edison companies announced they were preparing to put into operation immediately a scheme which would reduce the cost of electric lighting to the consumers by 25 to 50 per cent. The companies propose to cut down the bills by introducing tungsten and tantalum lamps.

Municipal Power with Irrigation

Ogden, Utah.—The Mayor, Councilmen and citizens are working more earnestly than ever in behalf of the proposed municipal light and power plant. The latest proposition is from a local engineer, L. B. Spencer, who claims that, in connection with a dam at Cobbe creek in South Fork Canyon, sufficient water may be stored, in addition to that needed for electricity, to irrigate from 12,000 to 15,000 acres of arid land. As irrigated land is worth \$100 per acre and arid land little or nothing, this would go a long way towards paying the cost of the enterprise.

St. Paul's Gas Is Below Standard

St. Paul, Minn.—According to tests made by Gas Inspector Talbot with his new photometer, the candle power of the gas furnished by the St. Paul Gas Light Company has a candle power of 13.32 instead of 16, as required by ordinance.

FIRE AND POLICE

Test of Fire Department and Water Works

Cambridge Springs, Pa.—A satisfactory test of the efficiency of the water works and fire apparatus was recently made in the presence of Edgar Schweitzer, Engineer of the Underwriters' Association. In two and a half minutes after the alarm was given the hose cart was taken from the City Hall down to the park, a coupling made to the hydrant, a line of hose laid and a stream of water thrown. In order to test the water pressure and supply, four lines of hose were attached and the normal pressure of 75 pounds was reduced only to 64 pounds. Mr. Schweitzer, who expected to see the pressure drop to 50 pounds, thought this a remarkable showing.

Fire Conditions to Be Improved

Fort Wayne, Ind.—Steps have been taken to improve fire conditions. A building ordinance will be passed, as well as an ordinance ordering wires in the downtown district placed under ground. Two aerial trucks and some minor equipment will be purchased. Nine additional men will be placed on the rolls of the department.

School Building Equipped With Fire Alarms

Fulton, N. Y.—The Fire Department has finished the installation of the new fire alarm system at the Fourth Street School Building, which makes it possible to turn in an alarm from seven different stations located in different parts of the building and all connected with the new fire alarm box No. 41, placed just outside the building.

Trolley Headlights and Fire Horses

Hoboken, N. J.—In his annual report, Chief Engineer Dunn of the Fire Department complains of the powerful headlights in front of some of the trolley cars, and said it was dangerous to drive some of the high-spirited horses in the Department toward them. He says that if the Commissioners could induce the trolley company to substitute less powerful lights, it would be a service well performed.

Powerful Brakes for Fire Apparatus

Lynn, Mass.—Powerful brakes, similar to the style used on motor vehicles and working directly upon the rear hubs, are being placed by Chief Harris upon some of the apparatus in the Fire Department where brakes which will work quickly and effectively are badly needed. While Engine 3's wagon was in the paint shop, Chief Harris had the repair men at the Broad street house attach the band brakes to the rear hubs simply as an experiment. The brakes were subjected to a severe test and were found to work perfectly. The Highlands chemical, which has to descend a steep decline at almost every alarm to which it responds, will be the next vehicle to be fitted with the new brakes, and as fast as the work can be done, other wagons will be sent to the repair shop.

Bertillon System for Small City

Newburgh, N. Y.—It is possible the Bertillon system of measurements of criminals will be introduced. Marshal Perrrott is anxious to have the system, and Mayor McClung has the matter under consideration. The cost for installing the system on a scale which would be sufficient for Newburgh would not be very large. It is thought that \$200 would cover the expenditure.

Mounted Police for Troy

Troy, N. Y.—Commissioner of Public Safety Mann has been authorized by ordinance to establish a mounted police system. Four men, picked from among the present members of the force, will be assigned to the squad. Funds have been appropriated to purchase four horses at \$300 each, and \$25 a month is to be allowed for their board. One hundred dollars each is allowed for equipment. Two men will go on at 1 p.m. and serve until 6:30 p.m., the other two will serve from 6:30 p.m. until 1:30 a.m.

Chief Plans to Improve Fire Department

Williamsport, Pa.—Fire Chief Frank Stryker is developing plans to improve the Department. The authority of captains will be increased both in regard to dealing with the men in matters of discipline and regarding affairs in his district. Complaints from the men will be dealt with by the captains instead of the Chief. Captains will be required to familiarize themselves with the construction of large buildings in their districts. The first captain to arrive at a fire will act as Chief until the Chief arrives. Still alarms will be done away with. The city will be so districted that not less than two companies will respond to any alarm.

A Busy Police Board Meeting

Springfield, Mass.—At a recent meeting, at which Mayor Wm. E. Sanderson presided, the Police Commission decided to abolish the emergency squad. In order to lessen the chances of suicide among prisoners it was decided to place iron ceilings over the cells in the place of iron bars. A detail of 32 men will be organized to act as an escort at parades and do duty in suppressing disorders. To guard against friends handing liquor or other contraband articles between the bars to prisoners, a quarter-inch screen will be placed over the bars.

GOVERNMENT AND FINANCE

Contract and Day Labor Systems Under Discussion

Boston, Mass.—Mayor George A. Hibbard and Chairman Nathan Matthews of the Finance Commission are not fully in accord on the question of keeping up the direct labor system in a number of branches of city work. The Commission engineers have reported in favor of the contract system on the ground of its being more economical, but the Commission has not officially recommended its adoption. Mayor Hibbard believes that employees who have been in the service for many years should be protected. Further, he believes that under proper supervision the excess cost of day labor over contract labor would be little, if any.

Liquidates Old Debt

Decatur, Ala.—The old city debt of Decatur has been liquidated. In 1888, bonds for street improvements to the amount of \$50,000 were issued. No interest was ever paid on them, so that when they became due this year the debt with interest amounted to \$120,000. The creditors have agreed to accept \$60,000 5 per cent. bonds in full settlement of their claim.

El Paso's Commission Popular

El Paso, Tex.—El Paso has been operating under a commission form of government for more than a year and the change has proved popular. Four Commissioners receive \$1,800 a year and give six hours' time every day to the city. There are no committees to be blamed for delays in legislation. Each Commissioner looks after a department to which he is assigned by the Mayor. Business matters are transacted quickly at board meetings, the Mayor voting in case of a tie. Mayor James N. Sweeney says that citizens are so much better satisfied than formerly that moneys are properly expended, that they are more liberal in reference to taxes generally and the issuance of bonds for public improvements.

Contracts for City Work and Supplies

Utica, N. Y.—Mayor Thomas Wheeler has written a letter to the heads of departments calling their attention to the fact that, while the uniform charter of cities of the second class prescribes that all purchases in excess of \$250 shall be made after competitive bids are received, still it would be in the public interest to procure, where possible, bids for work and materials when the amount to be expended will not reach that figure. The Mayor says, further, that for the public information all the bids received should be published.

Public Works Department Reorganized

Grand Rapids, Mich.—Radical changes have been authorized by the Board of Public Works upon the recommendation of General Manager Samuel A. Freshney, the most prominent of which is the concentration hereafter of all the bookkeeping and accounting of all the departments of the board under the general office department. This change is to be made as soon as possible and as far as practicable. An Assistant City Engineer was also appointed who will hereafter assist City Engineer L. W. Anderson in the performance of his duties. The Assistant Engineer, as appointed, Peter M. Louweise, is at present engaged in looking after street improvements and sewers, but during the absence of the Engineer is expected to assume full control of that department.

Financial Suggestions in Mayor's Message

Joliet, Ill.—Treating of city finances, Mayor Cronin, in his first annual message, placed himself on record in favor of a lower tax rate. A sinking fund for the reduction of the bonded debt is also recommended. He suggests the advisability of the municipality following the lead of other cities and availing itself of taxing powers such as the wheel tax and the renting of a space beneath sidewalks. During the past ten years small sums ranging from ten cents to two or three dollars have accumulated from special assessments until the sum amounts to \$8,000. This the Mayor would make available for general purposes.

Two Embezzlements Found in Mobile

Mobile, Ala.—Expert accountants have discovered a shortage in the books of former City Clerk R. B. Owen, to the amount of \$29,900. This is the second shortage found in a month, an Assistant City Clerk, Conway Penny, having admitted taking \$2,800. The shortage dates back from 1896 to 1903, and a bonding company of Baltimore, Md., is good for the first named sum.

Huge Damage Claims Against City

New York, N. Y.—An insight into the work of the Law Department is given in a report of J. T. Mahoney, Chief Auditor of the Law and Adjustment Division, to Comptroller Metz, showing the claims now pending against the city. They amount altogether to \$74,743,510, as coming under the following main heads: Prevailing rate of wages, \$4,231,064; damages for personal injuries, \$20,476,321; claims for extra work and damages to real estate and personal property, \$42,026,249; sewer damages, \$2,425,386, and awards for street and park openings, \$3,800,000. Mr. Metz said the only item which affected the borrowing capacity of the city was the one relating to the awards for street and park openings. The others, if allowed by the courts, would be paid out of revenue bond issues. In the last two years about 4 per cent. only of such claims taken to court have been allowed.

Favoritism Charged in Awarding Contracts

Washington, D. C.—The Commissioners of the District are conducting an investigation into charges of favoritism shown by the Engineering Department in the awarding of certain contracts. The charges involve principally the conduct of Charles Fernald, when Assistant Engineer of Highways, a position from which he was recently permitted to resign. Fernald admitted having met Contractor Cranford after he had opened a bid for a piece of work from the Beall Construction Company and before Cranford submitted his bid, which proved to be the low one. In the matter of street paving contracts, bidding has been found to be so close that even questions of cost of inspection, if admitted as an item in the consideration of a bid, would have changed the award. Favoritism is also charged in the matter of paying for excavation taken from one job and delivered on another. Prices for work in Washington have been so low that outside contractors seldom bid on District work.

Eight-hour Day Adopted in Rochester

Rochester, N. Y.—All city laborers have been working under the eight-hour law at the rate of \$1.50 a day since the first Monday in May. This schedule was decided on after an investigation of conditions in neighboring cities. A letter was also received on the subject from the Commissioner of Labor at Albany which very strongly urged the eight-hour day.

Electors Favor All Bond Projects

San Francisco, Cal.—At the bond election recently held, all of the six propositions were carried by a vote of approximately 15 to 1. The total issues amount to \$18,000,000, and include \$5,000,000 for an auxiliary water system for fire protection; \$4,000,000 for sewers to carry out the Grunsky plans made a number of years ago, which provide for the entire city and suburbs; \$5,000,000 for school houses and sites; \$2,000,000 for hospitals, which contemplates a main building for acute and surgical cases, and smaller buildings for tuberculosis patients and others suffering from mild contagious diseases; \$1,000,000 for a Hall of Justice and jail; \$1,000,000 for a garbage disposal plant, for which plans have been made for two plants, one to dispose of 250 tons a day and the other 700 tons.

REFUSE COLLECTION AND DISPOSAL

Uses Maps and Pointers to Record Work

Baltimore, Md.—Col. J. L. Wickes, Superintendent of Street Cleaning, has completed the preparation of five large maps which, with the use of crayon colors and figures, so systematize the work of his department that at any time he can name sweepers, the number of the cart, and the nature of any complaint at any spot in the city. The same information is also given in regard to garbage collection. The entire city has been divided into 158 districts, to each of which is assigned a garbage cart, the numbers of cart and district corresponding. Seven Assistant Superintendents report hourly to Mr. Wickes' office. A desk man, receiving the calls, places a tack on the map indicating the Assistant Superintendent's position. An arrow on the tack shows the direction in which his force is working.

Delinquent Garbage Contractors

Harrisburg, Pa.—Chairman E. C. First of the Sanitary Committee of Councils has notified the garbage contractors, Carlile and Martin, that they have failed to keep their contract, in fact, that they have not done a single thing that was contemplated by it, and that they will be charged with the full amount of the penalty for every item of default as prescribed in the contract.

Plainfield Adopts Garbage Ordinance

Plainfield, N. J.—The sanitary code has been amended by the passage of an ordinance regarding the collection and removal of garbage, offal and dead animals. The collection is to be done by private collectors who are licensed for one year. They must use watertight metal or metal-lined wagons or metal cans with tight covers. In the central district of the town collections must not be made between the hours of 9 A.M. and 5 P.M. Wagons must not stand on the streets except when being loaded or unloaded. Householders are required to have garbage collected once a week in winter and twice a week in summer. They must keep their garbage in metal cans with tight covers.

Plans for Incinerator Years Ahead

Syracuse, N. Y.—City Engineer Henry C. Allen, replying to the criticism of Contractor John Young, that the term of five years for which it is proposed to let the garbage contract is too short a period to invite low bids, explains the city's plans. Syracuse does not wish to dispose of its garbage by reduction, but favors incineration. This method is not to

be adopted at present because the city wishes to benefit by the experience that can be gained from other cities in the next few years. In about five years it is proposed to build the incinerating plant near the sewage disposal pumping plant which will then be in use. Surplus heat from the incinerator will be available for pumping sewage.

PARKS AND OUTDOOR ART

Citizens Purchase Land for Park

Bellingham, Wash.—Fifteen of the leading citizens of Bellingham, with the aid of the Young Men's Commercial Club, have joined in the purchase of a tract of land near Whatcom Falls to be held with a view to its ultimate purchase by the city for park purposes. The tract, for which \$12,000 was paid, is one of the most beautiful in the section and might have been difficult to secure a few years hence. The men who made the purchase are I. J. Adair, J. H. Bloedel, L. H. Bean, E. B. Deming and others.

Parasites to Exterminate Moths

Boston, Mass.—Within a few days 100,000 European parasites will have been let loose in Massachusetts to exterminate the gypsy and brown-tail moths, which destroy trees. For two years experts have been propagating the parasites at Melrose. One variety, a big beetle, climbs the trees, seizes the moths and never lets go until it has devoured the wriggling insect. Another lays its eggs upon the outer skin of the moths, usually close up to the head. The larvae that hatch penetrate the skin and feed upon the moth's intestines. Another group of parasitic flies deposits eggs inside the skin of the moth, and still another, a minute midge, drills into the moth's eggs and lays its eggs inside. The larvae of the parasite feed upon the contents of the caterpillar's eggs.

Electric Sign Ordinance Discussed

Hartford, Conn.—An unfavorable report on the illuminated sign ordinance has been made by a joint committee to whom the question was submitted. The report was based on an opinion given by the Corporation Counsel. The ordinance proposed to permit the maintenance of signs projecting three feet over the sidewalk. The Counsel raises the point that these signs are no less objectionable than ordinary projecting signs, which are now prohibited. Therefore, without considering the broad question as to whether Council has authority to license encroachments on the streets which make them less safe and diminish their value to the public, he says the proposed ordinance is a contravention of the existing ordinance and the two must stand together.

River-front Improvement

Lowell, Mass.—The Park Department will soon start work on the land stretching six blocks along the river-front, leased for the purpose from the Locks and Canal Company. An error of some official of the Legislature who undertook to correct or improve the phraseology of the bill to give the city power to expend money on a plot on Anne street rendered the measure useless. So that unless a new bill can be got through, nothing can be done on that tract this year. It is badly needed as a breathing place for mill people at noon.

Outdoor Art Discussed

South Bend, Ind.—Plans to improve the appearance of the city have been taken into consideration by the Board of Public Works working with a committee of the Business Men's Association. Beautifying the river banks by planting trees from Howard Park eastward to Leeper Park and up to the city limits was one of the topics discussed. Regulation of billboards by placing them at least 40 per cent. from the street and requiring that the intervening space be cleared up was also proposed.

Subscriptions Follow Playground Lecture

Scranton, Pa.—Following an address by Jacob Riis at the Poli Theater, in which he recounted the growth of the playground movement in New York, a subscription was taken which resulted in the contribution of \$3,400. As the use of four plots has been donated to the city, the success of the movement is assured.

RAPID TRANSIT

Electric Railway Terminal for Boston

Boston, Mass.—A plan for making the electrified transportation service centre at the Park Square station has been submitted by George W. R. Harriman, consulting engineer for the Metropolitan Improvement Commission. The station would receive the electrified train service from the southern suburbs, the street car lines from surrounding streets and the electric train from the north through a new tube extending from the Boylston street station. At a point in the present subway opposite Charles street a new tube would branch off, entering the Park Square station under ground. At the west end of the station electric trains would run in sunken roadbeds, going under Clarendon and Berkeley streets. Surface cars from Roxbury would enter the station from Columbus avenue.

Cleveland Cars Blown Up

Cleveland, O.—Five cars were blown up in different parts of the city a minute after midnight, May 20, as a result of the strike. At least five persons were injured. One car was hurled from the track by an explosion of dynamite, and was thrown against the brick wall of an apartment house. The police are seeking the occupants of five buggies seen in various parts of the city just before midnight, and believed to have distributed nitro-glycerine packed in infernal machines. However, with the selection of arbitrators to consider the bill of arbitration which is said to have been agreed upon between the strikers and the Municipal Traction Company there is little doubt that the strike will soon end. Two of the arbitrators have already been selected. They are Professor Elroy M. Avery for the men and Arthur A. Stearns, an attorney, for the company.

Another Extension of Boston Elevated Road

Boston, Mass.—The Boston Elevated Railway Company has been granted authority to extend its overhead structure to Medford, where surface lines run in from Lowell, Woburn, Winchester, West Medford and several districts in Medford and Malden. The route will be by way of Mystic avenue, a long straight road across the marshes on the outskirts of Somerville and Medford. The selection of this route is in pursuance with the policy of the company of securing express lines from outlying centers, without attracting passengers who are well served by surface lines from intermediate points.

Alteration of Subway Cars Impracticable

New York, N. Y.—General Manager Frank Hedley of the Interborough Company, testifying before the Public Service Commission, said that the alteration of cars now used in the subway was impracticable. The cars would have to be cut into three pieces and the remade car would not be safe unless the weight were so increased—from 1,200 to 3,300 pounds—as to make the operation more costly and less speedy.

Jersey City and Tunnel Company Disagree

Jersey City, N. Y.—In a communication to the Jersey City Street and Water Board, President William G. McAdoo, of the Hudson and Manhattan Railroad Company, withdrew the application of the tunnel company for privileges in Jersey City. The terms that the company cannot accept are the obligation to charge only five cents from any point in New York to any point in Jersey City, which Mayor H. Otto

Wittpenn insists on. The tunnel company will confine itself to the building of stations in the Pennsylvania railroads right of way. Mayor Wittpenn says he will stand by his demand for a five-cent fare.

MISCELLANEOUS To License Lodging Houses

Boston, Mass.—Mayor George A. Hibbard has appointed an unpaid commission, whose duty it will be to investigate lodging-house conditions with regard to morality, health and safety. He will soon send to the City Council an ordinance which will require every lodging-house keeper in the city to procure a license, the conditions of which must be lived up to in every respect by the possessor. The regulations will be similar to those in force in New York. While Mayor Hibbard has always been interested in practical social questions, his attention was called to this matter at the Conference of Charities and Corrections which he attended at Richmond, Va.

Contractors Requested to Employ Americans

Harrisburg, Pa.—Both the Highway Department and the Board of Public Works are asked to give preference to American workmen instead of foreigners on laboring jobs in the resolution passed by Councils and which was signed by Mayor Meals. The resolutions state that foreigners are being employed by many contractors at as low as ninety cents a day and ask that American laborers be given preference and that they be paid at least a dollar and a quarter a day.

Ordinance for Flood Control Dam

Harrisburg, Pa.—Mayor Meals has signed the ordinance that makes possible the erection of the flood-controlling dam in Wildwood Park. The ordinance provides for the occupation and overflow of over ten acres of Pennsylvania railroad land which lies along the old canal. A wall will be built along the top of the abandoned tow path.

New York's City Hall to Be Highest in the World

New York, N. Y.—The plans of McKim, Mead & White for New York's City Hall have been accepted. The building will stand in the triangle of Park Row, Center and Duane streets. It will be twenty-three stories high in the main portion, with eleven stories in the tower, the top of which will be nearly 560 feet above the sidewalk. The building will house practically all the city departments and vacant space will be rented, which is expected to bring in \$500,000 in rentals annually. The architects have endeavored to have the City Hall conform in general classic lines to the style of the county and municipal buildings in the neighborhood. The building will cost about \$7,000,000.

Disinfection of Books

Norfolk, Va.—Books in the Public Library are now being fumigated to prevent the spread of scarlet fever and other contagious diseases. The numbers of the houses where such diseases exist are posted in the library from day to day and no member of a quarantined house will be allowed to draw books from the library until the quarantine is removed. This step is taken as a possible aid to the prevention of the spread of scarlet fever or rather as a precaution against it.

Boy Farm for the Wayward

Tacoma, Wash.—A committee has been appointed to collect data and examine into the legal possibilities of establishing a boy farm for the wayward youngsters of the city. During the past few years half a dozen gangs have appeared in various parts of the city and their crimes have varied from petty thieving to highway robbery, burglary and forgery. It is proposed to put the boys to work milking cows, raising chickens and caring for gardens, and they will be taught both trades and agricultural pursuits and at the same time given an education.

LEGAL NEWS

A Summary and Notes of Recent Decisions—Rulings of Municipal Interest

SALE OF LIQUOR—ORDINANCES

Town of Montclair vs. Scola.—The book in which the ordinances of a town are engrossed and signed by the Town Clerk as required by Public Laws 1895 is sufficient prima facie proof of the existence and due publication of an ordinance therein contained. An ordinance is not repealed by implication when another ordinance not inconsistent therewith, and not covering the same field, is subsequently passed. Testimony that the defendant delivered one-half of a box of beer from his wagon to one Russo at his house in Montclair; that the delivery was made on the order of Russo; that the wagon of the defendant at the time of the delivery contained many other similar boxes of beer; that the box of beer delivered was in no way marked to distinguish it from the others, and was not set apart for the person to whom it was delivered—justifies a finding of a sale in Montclair, notwithstanding the fact that credit was extended until the end of the month, when payment was made in Glen Ridge.—Supreme Court of New Jersey.

ELIMINATION OF GRADE CROSSING—DAMAGES

People ex. rel. Dole vs. Town Board of Hamburg, Erie County.—Railroad Law, Laws 1897, provides that a municipal corporation in which a highway crossing is located may, with the approval of the railroad company, acquire by purchase any lands, rights or easements necessary or required to carry out the provisions of the act relating to the abolition of grade crossings; but if unable to do so it shall acquire such lands, rights or easements by condemnation, either under the condemnation law or under the provisions of the charter of such municipal corporation, the railroad company being given notice of the proceedings and the right to be heard therein. Held, that where a city street was elevated by order of the State Board of Railroad Commissioners to enable a railroad to cross under it, and such crossing substantially impaired relator's right of access to the street, and both the town and the railroad company repudiated relator's claim for damages, he was entitled to mandamus to compel the town to institute proceedings to condemn his easement so affected.—New York Supreme Court.

MUNICIPAL BUILDING—LIENS

Arzonico et al vs. Board of Education of Town of West New York.—A municipal board, in making a contract for the erection of a municipal building, acts as the agent of the municipality, and the contract into which it enters is the municipality's contract. Where a new remedy or mode of procedure is authorized, without an express repeal of a former one relating to the same matter, and the new remedy is not inconsistent with the former one, the later act will be regarded as creating a concurrent remedy, and not as abrogating the former mode of procedure. Mechanic's Lien Law provides for a lien for materials furnished to or work done on public buildings, and the Act of March 3, 1892, secures payment for work done upon or materials furnished toward any public improvement. Held, that the latter statute did not repeal the former in so far as it related to work done on public buildings, but prescribed a concurrent remedy; and hence a materialman was entitled to enforce a claim for materials used in a public building under the former Act.—Supreme Court of New Jersey.

DEDICATION OF STREET

City of Stuttgart et al. vs. John.—Where landowners lay out a town or an addition to a city or town, plating it into blocks and lots intersected by streets and alleys, and sell lots by reference to the plat, they thereby irrevocably dedicate the streets and alleys to public use. Where city lots have been sold with reference to a plat of the addition, no formal acceptance by the city or town is necessary to constitute a dedication of the streets and alleys, the city being authorized to accept at any subsequent time and assume control over such streets and alleys. Where complainant purchased certain city lots with full notice of the dedication of a street through the same, and there had been no change in the status of the property, the city not being bound to put the dedicated street into use until the public convenience required, was not barred by laches from subsequently opening the streets notwithstanding its delay.—Supreme Court of Arkansas.

CONTRACT—MISTAKE AS TO BID

Blassingame vs. City of Laurens et al.—A requested charge in an action by a contractor for breach of a street improvement contract, wherein the defense was made that the Council had made a mistake as to the plaintiff's bid, believing that it was 32 cents a cubic yard, whereas it was 32 cents a square yard, that if plaintiff knew and the Council told him that they rejected the bid of another contractor and agreed to award plaintiff the work at a less price, and plaintiff accepted that and went to work, that would be the price that he should be paid; and that, if he didn't go into a contract, the Council had the right to stop him, and if he went to work without accepting this proposition when he knew the Council only agreed to award him the work at 32 cents a yard, he went to work without any contract, and the Council had a right to stop him—was so vague and uncertain that it could not have failed to have confused the jury, and the court responded to the request as favorably as could be expected in saying that, if plaintiff went to work with no contract with the Council they had a right to stop him at any time.—Supreme Court of South Carolina.

DEFECTIVE STREETS—DUTY OF CITY

Hysell vs. Central City.—In an action against the city for death from driving over a defective street a declaration charging "that the said defendant negligently allowed and permitted the said public street to become and remain in bad order and out of repair, in this, to wit, that the said defendant negligently allowed and permitted a certain hole, excavation, or washout, a steep descent and fall of nearly two feet in depth, in width about one foot, and length about four feet, in the said street, sufficiently charges negligence, and is good upon demurrer. Where the duty to keep its streets in repair is imposed upon a municipality by its charter or by general statute, of which the court is bound to take judicial notice, no averment in the declaration as to such obligation is necessary.—Supreme Court of Appeals of West Virginia.

REGULATION OF PLUMBERS

Felton vs. City of Atlanta.—The business of plumbing is so related to the public health that the regulation of it is a legitimate subject for the exercise of the police power. However, the right of every citizen to labor at any and all common and honest employments is of such high importance that any statute or ordinance placing restrictions thereon will be strictly construed. The ordinances of the city of Atlanta regulating plumbing require all persons who work at that occupation as master, employing or journeyman plumbers to stand an examination and secure a certificate of proficiency. The ordinances do not in terms include apprentices and helpers working under licensed master or journeyman plumbers, and they will not be included by judicial construction. The evidence not showing that the defendant was engaged as a master or journeyman plumber, but, on the contrary, showing that he was a mere helper to a licensed plumber in charge of the work, his conviction was unauthorized.—Court of Appeals of Georgia.

ESTABLISHMENT OF STREET GRADE

Fleming vs. City of Rome et al.—The municipal authorities of Rome can lawfully have a street therein, the grade of which has been previously established on the city's initiative, brought to such grade without first having the damages which a landowner will suffer by reason thereof assessed and paid, or tendered, when none of his property is actually taken; such grading not being done in pursuance of the general plan or system contemplated by the eighth section of the Act of 1907, amending the charter of such city.—Supreme Court of Georgia.

STREET OBSTRUCTION—NEGLIGENCE

Pennsylvania Steel Co. vs. Wilkinson; Mayor, etc., of Havre de Grace vs. Same.—Where a steel company constructing a trestle over a street negligently permitted a looped rope to hang so low into the street that a top buggy could not be driven under it, and plaintiff's horse was frightened by the swinging of the rope and ran away, causing plaintiff's injuries, the negligence of the steel company in permitting the rope so to hang was the proximate cause of the injury, regardless of whether the swinging of the rope was due to the negligence of one of the steel company's servants or a stranger, the swinging of the rope being at most a mere concurring and not an independent act of negligence. A motion to direct a verdict in favor of two defendants was properly denied, where one of them was liable.—Court of Appeals of Maryland.

USE OF STREETS—PERSONAL LIBERTY

City of St. Louis vs. Gloner.—While the city of St. Louis, under the direct provisions of its charter, has the power to regulate the use of its streets, it may not do so in a way that interferes with the personal liberty of a citizen as guaranteed to him by the Constitution and laws. St. Louis City Charter authorizes the city to regulate the use of its streets, and the municipal code of the city provides that any person who shall lounge, stand or loaf around or at street corners or other public places shall be guilty of a misdemeanor. The Constitution guarantees to every citizen the right of personal liberty. Defendant was prosecuted for standing on the street corners, he being at the time engaged in picketing the premises of a store whose employés were on a strike, and was conducting himself in an orderly manner and not interfering with travel. Held, that defendant had the right to stop and remain on the street, so long as he conducted himself properly and did not interfere with the use of the street, and the ordinance was unconstitutional, as infringing upon the right of personal liberty, and was unreasonable and oppressive.—Supreme Court of Missouri.

STREET WIDENING—REGULARITY

In re City of Seattle.—An ordinance authorized the condemnation of land on each side of a street for widening it. After the institution of the condemnation proceeding, the Council passed a resolution abandoning the plan of widening the street on one side thereof at a particular point, and directed the dismissal of the proceeding as to that property, which was done. It was not shown that any property in the assessment district would be less benefited by reason of the omission, or that the omission of the strip from the taking would be detrimental to any particular property in the district, and it was not shown that the improvement as a whole would be affected by the omission. Held, that the change was not a material one, and owners could not attack the assessment for the improvement on the ground that they were assessed for a different improvement from that originally authorized. The property of a street railway located in a street is not assessable for an improvement of the street.—Supreme Court of Washington.

CONTRACTS—REGULARITY OF PROCEEDINGS

Ferguson et al vs. City of Coffeyville et al.—In a suit to enjoin a special assessment for street paving, on the ground that the proceedings of the City Council were void under the statute of frauds because a member of the City Council was a stockholder in the brick company which furnished material for the paving, and that another member of the Council accepted employment as a laborer under the contractors, an injunction is properly denied where it appears from the findings of the court that the proceedings of the Mayor and Council were in all respects regular; that no fraud was shown on the part of any member of the Council, and that no member of the Council was interested directly or indirectly in the contract for the improvement. Where the Mayor and Council have passed upon the question and accepted the work of a street improvement as satisfactory, their action is conclusive and binding upon the property owners, in the absence of any showing of fraud in such acceptance.—Supreme Court of Kansas.

ORDINANCES—EVIDENCE OF PASSAGE

City of Spokane vs. Griffith.—On trial de novo on appeal from a conviction of violating an ordinance, the existence and contents of the ordinance were sufficiently established by being read from a legally authorized publication thereof, no exception having been taken to the reading, and no question being raised as to the authenticity of the ordinance so read, under Ballinger's Annotated Codes and Statutes, requiring copies of ordinances printed by authority of a city to be received as *prima facie* evidence that the ordinances were duly passed, requiring courts to take judicial knowledge of the existence of an ordinance on the title and the date of its passage being pleaded, and under section requiring defects in criminal proceedings not affecting substantial rights to be disregarded.—Supreme Court of Washington.

CARE OF SIDEWALKS—DUTY OF CITY

City of San Antonio vs. Wildenstein.—The duty of a city to use ordinary diligence in maintaining a sidewalk in a reasonably safe condition for persons to use the same comprehends the duty of exercising ordinary care to keep the sidewalk free from such holes as might reasonably be deemed such as would cause injury to persons while walking along the walk.—Court of Civil Appeals of Texas.

MUNICIPAL APPLIANCES

Indian Motorcycles

The motorcycle has in the last year or two become recognized as an appliance necessary for the proper equipment of the Police Departments of large cities. In fact, speed laws regarding automobiles can hardly be enforced in any practicable way except by a policeman mounted on a motorcycle. The conditions of automobile traffic have improved in a marked manner wherever they have been introduced, and, incidentally, they have become remarkable revenue producers. The fines collected soon far exceed the cost of the machines. Prominent among the makes of this class of vehicle is the Indian motorcycle, manufactured by the Hendee Manufacturing Co., Springfield, Mass. These machines are made in a number of styles as follows: $2\frac{3}{4}$ horsepower, single cylinder; $3\frac{1}{2}$ horsepower, single cylinder; 5 horsepower, twin cylinder; 4 horsepower, single cylinder, and 7 horsepower, twin cylinder. The advantages of the twin cylinder over the single are many. While it is only necessary to use the minimum amount of power for ordinary road riding, the reserve power of the twin is always at command. The constant tension on the driving mechanism produces a smooth running machine and, by a single movement, the speed can be increased from a mere walking gait to sixty miles an hour. The specifications for the twin cylinder Indian, 7 horsepower, 60.32³ compression capacity, are as follows:



TWIN CYLINDER MOTOCYCLE

Motor—Hedstrom improved, air-cooled, 7-h.p., 60.32³ twin motor.
Stroke, $3\frac{1}{4}$ inches; bore, 37-16 inches.
Carburetor—Hedstrom improved automatic compensating carburetor.
Control—Indian patented, leverless, double grip, twist-of-wrist system. Right grip controls electrical spark and exhaust valves; left grip controls throttle.
Speed—Five to sixty-five miles per hour, according to gear.
Frame—Best seamless steel tubing, $1\frac{1}{8}$ top, 16 ga., $1\frac{1}{4}$ bottom, 14 ga. All joints internally reinforced. Height, 22 inches.
Fork—Indian patented improved convertible double cushion fork; may be made rigid by tightening one nut. Seamless steel tubing. Fork crowns and hinge joints are drop forgings.
Wheels—Twenty-eight inches; 36 spokes front and rear; spokes in rear wheel on motor drive sprocket-side laced in.
Wheelbase—Fifty-one inches.
Transmission—Chain drive, $\frac{1}{8}$ -inch pitch roller chains.
Gear—To order.
Brake—Corbin-Indian duplex motorcycle coaster-brake.
Saddle—Imported Brooks B-100 motorcycle saddle with compound springs. Options: B-100-4, B-90-4, for heavy riders, or racing saddle style.
Tires—G. & J.—Improved detachable $2\frac{1}{4}$ inches. Rims, hollow, steel, finished to match frame.
Battery—Indian special dry cells. Good for from 800 to 1,500 miles, dependent on care afforded. Option: Three regular No. 6 dry cells.
Coil—Hedstrom formula torpedo spark coil.
Spark Plugs—Hedstrom mica plugs.
Tanks—Gasoline capacity, 4 quarts; oil capacity, 1 quart.
Tool Bag—Indian improved square bag, containing all necessary tools, oil can and repair outfit.
Inlet Valves—Automatically operated. Option: Mechanically operated.
Magneto Ignition—\$40 extra.
Oil Gauge—This gauge is fitted at the base of the motor, whereby the rider can determine at all times amount of oil in base.
Weight—For racing, 120 pounds. Shipping weight, 220 pounds.
Finish—Royal Indian blue; all bright parts nickelized on copper. Options: Black or Indian red.

Variable Speed Power Transmission Device

A new device of possible usefulness in repair shops maintained by various city departments is the Variable Speed Power Transmission Device, manufactured by the Rotary File and Machine Co., 589 Kent avenue, Brooklyn, N. Y. This mechanism is intended to save the loss in profits due to the inability to control the speed of machines. It consists of a variable speed countershaft, an arrangement of expanding belt operating pulleys by means of which any variable speed relationship desired within the limits of 4-1 can be maintained.

NEWS OF THE SOCIETIES

American Society of Civil Engineers.

The following program and information regarding the Fortieth Annual Convention of the American Society of Civil Engineers, to be held at Denver, Col., June 23-26, has been issued. The headquarters and Secretary's office will be in the Adams Hotel, corner of Welton and 18th streets.

Monday, June 22—Evening.—Reception, with informal dancing, at the Adams Hotel, in the rooms of the Pan-Hellenic Club, which have been tendered through the courtesy of the President and Board of Directors.

Tuesday, June 23, 10 a.m.—Opening Meeting.—Address of Welcome by the Hon. Henry A. Buchtel, Governor of Colorado; and the President's Annual Address.

Afternoon.—"Seeing Denver" trip, by invitation of the Denver City Tramway Co., John A. Beeler, M. Am. Soc. C. E., Vice-president and General Manager. Through the courtesy of this company, transportation on its lines during the days of the convention will be free to all members and guests, and it has been arranged that the Convention Badge will serve as a pass on all cars of the company.

8 p.m.—Business Meeting.—The business to be considered will be as follows: The time and place for holding the next annual convention; two proposed amendments to the constitution, relating to the method of election of members.

Wednesday, June 24.—All-day excursion to Arrow (elevation 11,660 ft.) and return, by invitation of the Denver Northwestern & Pacific Railway (the Moffat road), H. A. Sumner, M. Am. Soc. C. E., Chief Engineer; W. A. Deuel, Esq., General Manager.

Evening.—Illustrated lecture on "Water Storage and Distribution," by F. H. Newell, M. Am. Soc. C. E., Director, U. S. Reclamation Service.

Thursday, June 25—10 a.m.—Meeting for discussion of the topic "The Maintenance of Macadam and Other Roads." This discussion will be opened by Arthur H. Blanchard, Assoc. M. Am. Soc. C. E. It is expected that this meeting will also be addressed by L. D. Ricketts, M. Am. Soc. C. E., on "The Mining of Metals."

Afternoon.—This afternoon will be left free for individual sight-seeing, rest or recreation. It is expected, however, that a visit will be arranged to an amusement park known as the "White City." An invitation has also been received from Dr. Victor C. Alderson, President of the Colorado School of Mines, at Golden, for a visit on this afternoon to that institution. Those who desire can probably visit this school, as well as the "White City," the same afternoon.

8 p.m.—The topic of the evening will be "Irrigation," the principal address being made by George G. Anderson, M. Am. Soc. C. E., which will be followed by general discussion.

Friday, June 26.—All-day excursion "Around the Circle" to Fort Collins, going via Boulder, and returning via Greeley. For this excursion a special train, with free transportation, has been tendered by the Colorado and Southern Railway, through Mr. H. W. Cowan, Chief Engineer, and the Union Pacific Railway Co., through Mr. R. L. Huntley, Chief Engineer. The party will be entertained at luncheon by the State Agricultural College, and the citizens of Fort Collins, Colo.

Evening.—Reception and ball at El Jebel Temple.

This completes the regular convention program, but the local committee has in view one or two post-convention excursions. A special free train has been tendered by the Denver & Rio Grande Railroad Company, through Mr. A. C. Ridgway, General Manager, and Mr. J. G. Gwyn, Assistant Chief Engineer, for a trip to Colorado Springs, Pueblo, Cañon City and the Royal Gorge. Free transportation for an excursion over the lines of the Colorado Midland to Cripple Creek and return via the Colorado Midland and Midland Terminal Railways has also been tendered by Mr. George W. Vallery, General Manager, Colorado Midland Railway.

Association of City Clerks of New York State.—The first convention of the association opened in Schenectady, May 14, about twenty-five members being in

attendance. Excursions and social features occupied the first day. On the second day, members assembled in the Council chamber of the City Hall where an address of welcome was delivered by Acting Mayor William H. Herron. The constitution and by-laws were adopted and officers elected for the first year. The following topics were discussed: "Tenure of Office of City Clerks and Mode of Appointment," discussion, opened by J. S. Hanlon, City Clerk of Auburn; "Tendency of Legislation to Increase Duties of City Clerks," discussion by E. J. Cox, City Clerk of Hornell, and Hon. Miles R. Frisbie, Schenectady; "Standardization of Systems of Records," discussion opened by W. O. Kerr, City Clerk of Ithaca; "Publication and Interchange of Manuals of City Government." The convention was brought to a close with a reception given by the Elks in Red Men's Hall. The following were the officers elected: Frank L. Fonda, Schenectady, President; Harold J. Balliett, Buffalo, Vice President; Joseph S. Hanlon, Auburn, Secretary; John J. Crowley, Elmira, Treasurer. President Fonda announced the following standing committees:

Committee on Rules—Taylor of Middletown, Sommer of North Tonawanda, and Hezlett of Amsterdam.

Committee on Time and Place for Next Convention—Kerr of Ithaca, Reynolds of Mt. Vernon, and Mertz of Rome.

Committee on Legislation—Bresler of Albany, Delaney of Troy, and Crowley of Elmira.

Committee on Systems and Records—Hanlon of Auburn, Bennett of Lockport and Salt of Rensselaer.

The clerks who attended the meeting were: Frederick U. Bresler, Albany; Thomas J. Hezlett, Amsterdam; Joseph S. Hanlon, Auburn; H. J. Balliett, Buffalo; J. J. Crowley, Elmira; M. V. B. Stetson, Gloversville; W. O. Kerr, Ithaca; J. T. Cummings, Kingston; E. S. Bennett, Lockport; I. B. A. Taylor, Middletown; A. W. Reynolds, Mount Vernon; W. J. Rainsford, New Rochelle; H. B. Sommer, North Tonawanda; J. G. Salt, Rensselaer; F. M. Mertz, Rome; A. E. Delaney, Troy, and Frank L. Fonda, Schenectady.

National Electric Light Association.—The thirty-first convention of the National Electric Light Association opened at the Auditorium, Chicago, Ill., May 18. The fear that attendance might be small, owing to business depression, proved groundless, as about one thousand members were present. The exhibit this year excelled in symmetry and classification those of previous years and the decorative features were notable. Conspicuous among the exhibits were those of the Allis-Chalmers Company, the General Electric, Westinghouse, Western Electric, Federal Electric, Simplex Heating, American District Steam, Crocker-Wheeler, Fort Wayne, W. H. Johns-Manville, Triumph, Central Electric and Wagner companies. The engineering department of the National Electric Lamp Association made an interesting exhibit of Tungsten lamps. The front of the Auditorium was illuminated with a number of flaming arc lamps including the Excello, G. I. Beck and German-American electric flame arcs. The session was opened by President Dudley Ferrand. He said that there were distinct evidences of business improvement and predicted an early return to prosperity. T. C. Martin, reporting for the Committee on Progress, gave the total number of plants in the United States as 5,037, in Canada 396, and in Mexico 62, making a total of 5,495 for the North

American Continent. He said that legislation had overshot its mark and it had come to be perceived that public service commissions cannot be constitutional in character unless they protect the interests and properties of corporations as equitably as they do the rights of the public to decent, honest treatment. A paper was read by George H. Lukes on "Distribution in Suburban Districts," in which he advocated the use of the same voltage by all plants in the same vicinity, so that they could help each other out in cases of emergency. A paper was read by P. D. Waggoner on "Series Incandescent Systems with Tungsten Lamps," in which he cited a case where in one installation of 172 lamps an average life per lamp of 1,350 hours had been obtained. The session closed with the appointment of a committee to prepare resolutions specifying the limiting potentials of high-tension circuits so as to bring this designation in accordance with the Underwriters' National Electric Association. This committee is composed of Paul Spencer, G. H. Lukes, C. P. Steinmetz, E. H. Davis and J. E. Moulthrop.

Municipal League of New Jersey.

Mayor Andrew F. MacBride, of Paterson, has announced the personnel of the committee on plan and scope of the new Municipal League, of which he was made chairman at its first meeting at Jersey City. The Mayor named Mayor H. Otto Witt-penn, of Jersey City, as the chairman with Mayor Jacob Haussling, of Newark; William Berdan, President of the Board of Finance of Paterson; Mayor W. E. Florence, of New Brunswick, and Dennis Collins, President of the City Council of Elizabeth. It is understood that the League, when finally organized, will consist of the Mayor, President of the Council, City Counsel and Comptroller of each city.

Brooklyn Engineers Club.—At a meeting of the club, May 14, a paper on hydraulic machinery was presented by James W. Nelson. An excursion was made, May 16, by the members to New Village, N. J., where the cement plant of the Edison Portland Cement Company was inspected.

Calendar of Meetings

May 26-28.

League of Michigan Municipalities.—Annual convention, Manistee.—E. R. Schreiter, Jr., Secretary, Detroit.

May 26-28.

National Fire Protection Association.—Annual meeting, Chicago, Ill.—W. H. Merrill, Jr., Secretary, 382 Ohio street, Chicago, Ill.

June 2-7.

International Association of Chiefs of Police.—Fifteenth annual convention, Detroit, Mich.—Major Richard Sylvester, President, Washington, D. C.

June 3.

American Society of Civil Engineers.—Regular meeting at the House of the Society, 220 West Fifty-seventh street, New York City.—Charles Warren Hunt, Secretary.

June 9.

Municipal League of New Jersey.—Conference to perfect organization.—Mayor Andrew F. McBride, Paterson, N. J., Chairman of Committee.

June 17.

North West Ohio Volunteer Firemen's Association.—Thirty-fifth annual convention, Napoleon, Ohio.—J. H. Polher, Secretary.

June 23-26.

American Society of Civil Engineers.—Annual convention, Denver, Col.—Charles Warren Hunt, Secretary, 220 West Fifty-seventh street, New York City.

June 23-26.

American Society of Mechanical Engineers.—Annual convention, Detroit, Mich.—C. W. Rice, Secretary, 29 West 39th street, New York City.

June 23-26.

Society for the Promotion of Engineering Education.—(In connection with the convention of the American Society of Mechanical Engineers). Convention, Detroit, Mich.—A. L. Williston, Pratt Institute, Brooklyn, N. Y.

June 23-27.

American Society for Testing Materials.—Annual meeting, Hotel Traymore, Atlantic City, N. J.—Edgar Marburg, Secretary, University of Pennsylvania, Philadelphia, Pa.

June 24-25.

Indiana State Board of Health.—General Conference, Indianapolis, Ind. Dr. J. N. Hurty, Secretary.

June 29-July 2.

American Institute of Electrical Engineers.—Annual convention, Atlantic City, N. J.—Ralph W. Pope, Secretary, 33 West Thirty-ninth street, New York City.

July 24-25.

American Society of Heating and Ventilating Engineers.—Summer meeting, Niagara Falls, N. Y.—W. M. Mackay, Secretary, P. O. Box 1818, New York City.

August 25-28.

International Association of Fire Engineers.—Annual convention, Columbus, O.—James McFall, Secretary, Roanoke, Va.

September 21-October 12.

National Association for the Study and Prevention of Tuberculosis.—International Congress, Washington, D. C.—Dr. Henry Barton Jacobs, Secretary, Baltimore, Md.—Dr. Joseph Walsh, Philadelphia, Pa. Special Secretary of the Committee on the International Congress.

September.

New Jersey State Firemen's Association.—Annual meeting, Atlantic City, N. J.—William Exall, Secretary, 11 Howard street, Newark, N. J.

October 11.

International Roads Congress.—First convention, Paris, France.—President Leither, l'Inspecteur General des Ponts et Chaussees.

October 20-23.

American Society of Municipal Improvements.—Fifteenth annual convention, Hotel Dennis, Atlantic City, N. J.—A. Prescott Folwell, Secretary, 511 Flatiron Building, New York City.

PERSONALS

BURTON, HENRY, Superintendent and Chief Engineer of the Port Huron, Mich., Water Works, has been reelected.

CLAPP, OTIS F., City Engineer of Providence, R. I., has been reelected.

CLARKE, WILLIAM P., Mayor of Newport, R. I., temporarily filled the duties of Health Officer of the port recently, when Patrick H. Welch, Newport Health Officer, permitted the naval collier Abarenda to remain in quarantine several hours before seeing the pennant, but by the time the Mayor arrived aboard the collier the regular Health Office, had already found a clean bill of health.

DALTON, E. L., City Engineer of Dallas, Tex., who has been connected with the Department for twenty years, has resigned and will engage in private work, having opened an office in Dallas.

DOUGLASS, ANTHONY C., Mayor of Niagara Falls, N. Y., has appointed Richard Crick and William A. Brackenridge as members of the Grade Crossings Commission, to succeed Alexander J. Porter and Walter McCulloch, who resigned to become members of the new Water Commission; also J. Fred Neff as member of the Industrial Commission in place of George W. Whitehead, who is also a member of the Water Commission, and John C. Stricker, vice Richard Crick, while Max H. Elbe becomes a member of the Civil Service Commission, vice J. Fred Neff.

HARE, THOMAS C., Altoona, Pa., has been reelected City Solicitor over R. A. Henderson.

HELMICK, CHARLES W., has been appointed City Engineer of Helena, Mont.

HERRON, C. L., has been appointed City Engineer of Hillsdale, Mich.

HIBBARD, GEORGE A., Mayor of Boston, Mass., has named Street Commissioner William E. Hannan to succeed William J.

Welch, as Water Commissioner, at \$5,000 a year; Arthur G. Everett of the Board of Appeal to succeed John A. Rooney as Building Commissioner, salary \$5,000, and ex-Alderman Charles B. Wooley to succeed Schoolhouse Commissioner Thomas A. Mullen, as Sealer of Weights and Measures, at \$3,000.

The following salaried reappointments were made:

William Jackson, City Engineer, \$6,000 a year, one year.

John J. Murphy, Assessor, \$4,500 a year, as Chairman, and John H. Donovan, Assessor, at \$4,000 a year, for terms of three years each.

J. Alfred Mitchell, City Auditor, \$6,000 a year as City Auditor and \$1,500 as County Auditor and Clerk of Sinking Fund Commission, one year.

Charles R. Brown, City Collector, \$5,000 a year, one year.

Samuel H. Durgin, Health Commissioner, \$4,500 a year, three years.

Thomas M. Babson, Corporation Counsel, \$9,000 a year, one year.

George E. McKay, Superintendent of Markets, \$3,000 a year, one year.

George W. Morrison, Superintendent of Public Buildings, \$3,600 a year, one year.

Edward W. McGlenen, City Registrar, \$4,000 a year, one year.

Charles H. Slattery, \$6,000 as City Treasurer and \$1,500 additional, one year.

James H. Smyth, Superintendent of Printing, \$3,500 a year, one year.

John E. Gilman, Soldiers' Relief Commissioner, \$3,500 a year, one year.

The members of unpaid boards reappointed were:

Charles E. Stratton, Park Commissioner.

Conrad J. Reuter, City Hospital Trustee.

John O'Hare, Children's Institutions' Trustee.

Dr. John F. O'Brien, Consumptives' Hospital Trustee.

William P. Fowler, Institutions Registrar at a salary of \$3,000 a year, but declines payment.

Patrick J. Greene, Overseer of the Poor.

Horatio G. Curtis, Sinking Fund Commissioner.

Joseph H. O'Neil, Sinking Fund Commissioner.

Robert F. Clark, Director, Collateral Loan Company.

F. Spencer Baldwin, Trustee of the Statistics Department.

HUELS, F. W., Inspector of Gas and Electric Meters of Madison, Wis., has been reelected for the ensuing year by the City Council.

KELLEY, DR. W. G., member of the Board of Health of Bay City, Mich., has been reappointed by Mayor Gustaves Hine for five years.

PHILLIPS, ASA E., Assistant Engineer in the Sewer Department of the District of Columbia for eighteen years, has been appointed to the position of Superintendent of the Department, to fill the vacancy caused by the resignation of David E. McComb, and will fill the position temporarily until July 1, at which time it will be made permanent, providing Mr. McComb does not care to resume the duties.

SCHUFFERT, A., has been appointed City Surveyor of Wyandotte, Mich.

SOFFEL, JACOB, Alderman of Pittsburgh, Pa., has been elected Chairman of the Councilmanic Committee appointed to recommend a site for the proposed municipal asphalt plant, of fifteen plots offered, the other members being W. H. Melaney, Samuel McElroy, M. J. Hooper and Fred Herring.

SPEER, ROBERT W., Mayor of Denver, Col., has been re-elected over Horace Phelps.

VAN VOAST, HORACE S., Mayor of Schenectady, N. Y., recently enjoyed a two weeks' trip fishing for trout in North Creek and the Siamese Ponds, on the northern line of Hamilton and Warren Counties, in company with his business partner, Harry W. Leonard.

WARWICK, CHARLES F., former Mayor of Philadelphia, Pa., was guest at a dinner at the Hotel Majestic in that city, which was participated in by about three hundred,

including many notables. Mayor Reyburn was toastmaster, and the souvenir of the dinner was an edition de luxe copy of Mr. Warwick's new book "Danton," especially bound for each guest, containing the name of the guest printed therein, and with Mr. Warwick's personal autograph.

WHITE, THOMAS K., has been appointed City Engineer of Monroe, Mich.

TRADE NOTES

Cast Iron Pipe.—Chicago: A stronger demand for gas pipe is noted. Quotations 4-inch, \$27; 6 to 12-inch, \$26; 16-inch and up, \$25. San Francisco: Inquiries have fallen off, possibly owing to effect of shortage of rainfall. Quotations: 6 to 12-inch, \$38; 4-inch, \$39. Birmingham: The aggregate tonnage now in sight exceeds the expectations of any time within the last three months. Quotations: 4 to 6-inch, \$23; 8 to 12-inch, \$22; over 12-inch, average, \$21. New York: Approximation of selling price to cost of production is making prices firm though orders are small. Quotations: car load lots of 6-inch, \$23.50 to \$24 at tidewater.

Pig Lead.—Prices are firm. No lead is offered at less than 4.25c, New York. St. Louis price is 4.12 $\frac{1}{2}$ to 4.15c.

Changes in Staff.—The Northwestern Expanded Metal Company announces that its staff is now organized as follows: Henry Semple Ames, President; Oscar Bradford, Vice President; Wm. Hall, Treasurer; W. G. Bartlett, Secretary; Howard W. Foote, General Manager; Ernest McCullough, Chief Engineer; G. F. Dodge, Assistant Chief Engineer; C. S. Mooney, Engineer and Superintendent Chicago factory; F. M. Whetstone, Superintendent, Canton, O., factory.

Gas Company Earnings.—The net earnings of the United Gas Improvement Company, of Philadelphia, Pa., for the year ended Dec. 31, 1907, were \$6,001,146; dividends, \$3,663,136; surplus for the year, \$2,338,010. The net earnings are equal to 13.1 per cent. on the \$45,884,850 capital stock outstanding. The balance sheet shows the following statement of assets and liabilities as of December 31, 1907:

ASSETS	
Investment in gas, electric street railway, Welsbach and other companies, at cost price.....	\$60,895,974
Uncompleted construction contracts	82,609
Real estate, Philadelphia and elsewhere	1,062,839
Cash	3,321,324
Accounts and bills receivable....	1,841,077
Coupons and guaranteed dividends (accrued but not yet due)....	518,201
Store room material.....	112,939
Total	\$67,834,966
LIABILITIES	
Capital stock	\$45,884,850
Taxes (accrued but not due).....	208,397
Bills payable (time loans made June and October, 1907, for one year)	1,500,000
Accounts payable, due companies in which stock is owned.....	677,941
Sundry creditors	103,518
Undivided profits invested as above	19,459,759
Total	\$67,834,966

At the annual meeting of the company Rudolph Ellis and William Wood were elected directors to succeed W. W. Gibbs and George Phillier, resigned, and Morris L. Clothier was elected to succeed Samuel R. Shipley, deceased. Other directors were reelected. The officers were reelected.

THE WEEK'S CONTRACT NEWS

Relating to Municipal and Public Work—Street Improvements—Paving, Road Making, Cleaning and Sprinkling—Sewerage, Water Supply and Public Lighting—Fire Equipment and Supplies—Buildings, Bridges and Street Railways—Sanitation, Garbage and Waste Disposal—Police, Parks and Miscellaneous—Proposals and Awards

To be of value this matter must be printed in the number immediately following its receipt, which makes it impossible for us to verify it all. Our sources of information are believed to be reliable, but we can not guarantee the correctness of all items. Parties in charge of proposed work are requested to send us information concerning it as early as possible; also corrections of any errors discovered.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
Street Improvements				
Pennsylvania	Bedford	May 27	Bldg. State road, 17,000 ft., also 14,700 ft. long.	Jos. W. Hunter, Hwy. Com'r, Harsbg.
Pennsylvania	Norristown	May 27	Bldg. 2 State roads, 8,400 and 7,700 ft. long, U. Hanover twp.	Jos. W. Hunter, Hwy. Com'r, Harsbg.
Wisconsin	Green Bay	May 28, 10 A.M.	Material and labor for cement walks in Whitney Park.	H. Jansen, Chm. Com. on Sdwks.
Illinois	Chicago	May 28, 11 A.M.	Repairing asphalt pavements during term end, Dec. 31.	John J. Hanberg, Com'r Pub. Wks.
New York	New York	May 28, 11 A.M.	Paving wood block or creo-resinate block on concrete.	L. F. Haffen, Pres. Boro Bronx.
Ohio	Mt. Gildead	May 28, noon.	Bldg. Denmark stone and gravel road, 6 miles long.	W. C. McFarland, Co. Auditor.
Ohio	Cleveland	May 28, noon.	Furn. wood block; also brick and block paving, etc.	A. R. Callow, Sec'y Bd. Pub. Serv.
Michigan	Detroit	May 28, 1:30 P.M.	Constructing macadam on Gratiot road; cost, \$10,000.	Edw. N. Hines, Chm. Co. Com'rs.
Illinois	Aurora	May 28, 2 P.M.	Asphalt paving, 11,020 yds.; brick, 3,440 yds.; comb. curb and gutter, 8,090 ft., on 3 streets.	Myron J. Tarble, City Eng.
Pennsylvania	Clarion	May 28	Constructing 7,112 ft. State road, Washington twp.	Jos. W. Hunter, Hwy. Com'r, Harsbg.
Ohio	Portsmouth	May 28	Constructing county road.	F. N. Tynes, County Auditor.
Iowa	Le Mars	May 28	Constructing sidewalks on certain streets.	V. D. Hoffman, City Clerk.
Wisconsin	Milwaukee	May 29, 10:30 A.M.	Replacing wood with concrete walks in eight wards.	C. J. Poetsch, Chm. Bd. Pub. Wks.
Ohio	Westerville	May 29, noon.	Grading and paving 3 streets, brick or other sub material.	Elsworth Horlocker, Vil. Clk.
Ohio	Cincinnati	May 29, noon.	Treatment with oil of Hamilton & Springfield pikes.	Fred Dreis, County Clerk.
Indiana	Winchester	May 29, 1 P.M.	Grading and filling East Washington St.	R. H. Crandall, City Engineer.
Ohio	Paulding	May 29, 2 P.M.	Grading, draining, macadamizing, etc., 207,533 ft. road.	C. L. Straw, County Engineer.
Ohio	Cleveland	May 29	Laying cement sidewalks in certain streets.	A. R. Callow, Sec'y Bd. Pub. Serv.
New York	Green Island	May 29	Paving Hudson Ave. and Hamilton St.	Wm. H. Jarvis, Sec'y, Pub. Imp. Com.
Ohio	Columbus	May 29	Furnishing 100 tons of asphalt.	E. W. Hirsch, Sec'y Bd. Pub. Serv.
Nebraska	Lincoln	May 29	Paving and curbing H St., Dist. No. 37.	Thos. H. Pratt, City Clerk.
Pennsylvania	Wilkes-Barre	May 29	Macadamizing St. Mary's Cross road, 3,950 ft.	H. C. Mason, 67 Public Sq.
Indiana	Greencastle	May 30, 11 A.M.	Constructing macadam and gravel roads.	D. V. Moffitt, County Auditor.
Tennessee	Rogersville	May 30, 1 P.M.	Macadamizing about 20 miles of road.	J. R. Hawkins, Sec'y Co. Pike Com'n.
Ohio	Col bus Barracks	June 1, 10 A.M.	Bldg. brick road crossings, art. stone pavements, curb, etc.	Capt. H. J. Hirsch, Q.M., U.S. Army.
Indiana	Tipton	June 1, 10 A.M.	Constructing 15,775 ft. gravel road in Prairie twp.	J. F. Barlow, County Auditor.
Indiana	Decatur	June 1, 10 A.M.	Constructing 2 macadam roads.	C. D. Lewton, County Auditor.
Indiana	Ft. Benj. Har'sn	June 1, 11 A.M.	Grading and constructing macadam road.	Capt. Geo. H. Penrose, U. S. Army.
New Jersey	Hackensack	June 1, 11 A.M.	Macadamizing, etc., Belleville turnpike in 2 Counties.	Clk. Bd. Chosen Freeholders.
Massachusetts	k't Andrews	June 1, 11 A.M.	Macadam roads, concrete walks, grading, etc.	Capt. I. L. Fredenhal, Q.M., U.S.A.
New York	Port Slocum	June 1, 11 A.M.	Constructing roads, sidewalks, gutters, drains, etc.	Constr. Q. M., U. S. Army.
Ohio	Lakewood	June 1, 11 A.M.	Paving Lake End Ave. with brick or asphalt.	M. Cook, Village Clerk.
Indiana	Hartford City	June 1, noon.	Constructing 11,475 ft. gravel road, Licking twp.	L. W. Daugherty, County Auditor.
Ohio	New Riegel	June 1, noon.	Grading and stoning portions of sundry streets.	Frank N. Dell, Village Clerk.
Ohio	East Cleveland	June 1, noon.	Brick paving, grading, etc., Collinwood road.	K. F. Leet, Village Clerk.
Ohio	Cincinnati	June 1, noon.	Resurfacing with asphalt, etc., 2 streets.	John J. Wenner, Clk. Bd. Pub. Serv.
Pennsylvania	Alliquippa	June 1, noon.	Grading, paving, curbing, Main Ave., Third St.	Trimble & Miller, Boro. Eng.
Indiana	Williamsport	June 1, 1 P.M.	Improving 10,555 ft. of road.	R. L. Winks, County Auditor.
Indiana	Jasper	June 1, 1 P.M.	Constructing 4 miles and 80 ft., gravel road, Bainbridge twp.	M. A. Sweeney, County Auditor.
Indiana	Franklin	June 1, 1:30 P.M.	Constructing 6,155 ft. gravel road, Union & W. River twps.	W. B. Jennings, County Auditor.
Indiana	Kokomo	June 1, 2 P.M.	Constructing Godfrey gravel road in Harrison township.	Wm. L. Benson, County Auditor.
Georgia	Atlanta	June 1, 3 P.M.	Repaving 3,200 sq. yds. with creosoted block.	R. M. Clayton, City Engineer.
Maine	Portland	June 1, 3 P.M.	Constructing road at Fort Lyon, Cow Island in Harbor.	Capt. F. J. Morrow, U. S. Army.
Mississippi	Vicksburg	June 1, 7:30 P.M.	Paving, vit. brick, bitulithic, asphalt, 3 sts.; also sewer.	P. M. Harding, Acting Mayor.
New Jersey	New Brunswick	June 1, 8 P.M.	Grading and paving 2 streets and 2 avenues; 20,000 sq. yds.	John T. Kemp, St. Com'r.
South Dakota	Yankton	June 1, 8 P.M.	Constructing cement sidewalks on Broadway.	W. L. Bruce, City Engineer.
New Jersey	Paterson	June 1	Asphalt paving, 5 sts., 12,965 sq. yds.; asphaltic macadam, 5 sts.; 10,200 sq. yds.; wood block, Carroll St., 4,200 sq. yds.	H. J. Harder, City Engineer.
New Hampshire	Concord	June 1	Bldg. 2 macadamized roads; cost, \$3,000 and \$1,600.	A. W. Dean, St. Eng., Concord.
Indiana	Indianapolis	June 1	Stone paving, grading, etc., road in Laurenceburg township.	Wm. S. Fagaly, County Auditor.
Nebraska	Fremont	June 1	Paving and curbing certain streets; cost, \$20,605.	E. N. Morse, Chm. Bd. Pub. Wks.
Indiana	New Castle	June 1	Bldg. gravel road bet. Franklin and Henry townships.	W. L. Risk, County Auditor.
Pennsylvania	Doylestown	June 1	Bldg. 4 State roads; 4,200; 10,335; 14,680; 1,660 ft. long.	Jos. W. Hunter, Hwy. Com'r, Harsbg.
Iowa	Iowa City	June 1	Paving sundry streets and alleys.	Chas. Magowan, City Engineer.
Iowa	Harlan	June 1	Constructing all cement walks ordered during 1908.	H. E. Swain, City Clerk.
Indiana	Valparaiso	June 2, 10 A.M.	Constructing three macadam roads.	Stephen P. Corboy, Co. Auditor.
Indiana	Winamac	June 2, noon	Grading, graveling, etc., extensions 3 gravel roads.	Ellis S. Rees, County Auditor.
Ohio	Middletown	June 2, noon	Vit. brick paving, etc., Crawford St.	John Kunz, Clk. Bd. Pub. Serv.
Indiana	Brownstown	June 2, 1 P.M.	Constructing 10,556 ft. gravel road.	H. W. Wacher, County Auditor.
Indiana	Paoli	June 2, 2 P.M.	Constructing gravel road.	Alvin B. Ham, County Auditor.
Indiana	Vincennes	June 2, 2 P.M.	Bldg. gravel road, 3,755 ft. Vine, 9,965 ft. Bus. twp.	John T. Scott, County Auditor.
Pennsylvania	Grafton	June 2, 7:30 P.M.	Grading, paving, curbing, Noble Ave.	J. F. McMichael, Dir. Pub. Wks.
Iowa	Cherokee	June 2, 8 P.M.	Constructing 2,000 ft. or more of street crossings.	Wm. Shardlow, Jr., City Clerk.
New Jersey	Bayonne	June 2, 8 P.M.	Asphalt paving, 16,100 sq. yds., 3 streets, etc.	F. W. Dalrymple, City Eng.
Indiana	Bloomfield	June 2	Bldg. 2 gravel and macadam roads, Wright tp.; one, Stockton tp.	Peter M. Cook, County Auditor.
New Jersey	Irvington	June 2	Furn. 1,000 tons crushed mountain stone.	M. Stockman, Town Clerk.
Indiana	Muncie	June 3, 10 A.M.	Grading, draining; paving road in Center township.	Jos. E. Davis, County Auditor.
Indiana	Peru	June 3, 10 A.M.	Grading, draining, graveling, etc., rd. bet Cs.; 7,834.50.	Chas. Griswold, County Auditor.
New York	Brooklyn	June 3, 11 A.M.	Asphalt paving, grading, etc.; also cement walks.	Bird S. Coler, Boro. President.
New York	New York	June 3, 11 A.M.	Reg. land grading above high water, Shell road, Gravesend.	Com'rs, C. L. F., Cr. of The Mayor.
Ohio	Columbus	June 3, noon	Macadamizing, etc., Bagshaw pike, Truro & Mt'f in twps.	F. M. Sayre, County Auditor.
Illinois	Belleville	June 3, 3 P.M.	Vit. brick paving, 6,000 sq. yds.: sewer, 20,000 ft.; c. r.	Fred J. Kera, Mayor.
Indiana	Frankfort	June 4, 2 P.M.	Constructing eight gravel roads.	Charles F. Cromwell, Co. Auditor.
Indiana	Muncie	June 4	Bldg. brick road, Wheeling road; gravel road, Center tp.	Jos. E. Davis, County Auditor.
Indiana	Tipton	June 5, 10 A.M.	Constructing 2 gravel roads, 12,100 ft. long.	J. E. Barlow, County Auditor.
Indiana	Brookville	June 5, 1 P.M.	Constructing 11,950 ft. of road.	Chas. A. Miller, County Auditor.
Pennsylvania	Harrisburg	June 5	Bldg. 4 State roads, Chester Co., 48,920 ft. long.	Jos. Hunter, St. Hwy. Com'r.
New York	Fort Niagara	June 6, 10 A.M.	Constructing concrete walks at post.	Constructing Quartermaster.
Wisconsin	Racine	June 6, 10 A.M.	Grading Yout and N. Michigan Sts.	P. H. Connolly, Chm. Bd. Pub. Wks.
Indiana	Crawfordsville	June 6, noon	Improving Jarvis road in Brower township.	B. B. Engle, County Auditor.
Indiana	Delphi	June 6, 1 P.M.	Constructing 15,751 ft. macadam and 4,752 ft. gravel road.	M. G. Haun, County Auditor.
New Jersey	Camden	June 8, 11 A.M.	Macadamizing 4.83 miles of road.	J. J. Albertson, County Eng.
New Jersey	Cape May, C. H.	June 8, noon	Constructing 4,264 miles gravel road.	R. Fendall Smith, Co. Eng., Ocean C.

Street Improvements—Continued.

New Jersey.... Newark.....	June 8, 3 P.M.....	Grading and telford macadam paving, several roads, inc. 14,934 ft.; also one 11,162 ft. long.....	James Owen, 196 Market St., C. E.
New York.... Mt. Kisco.....	June 8, 3 30 P.M.....	Macadamizing, grading, etc., 3.3 miles of road.....	Joseph E. Merriam, Town Clerk.
Pennsylvania.... Latrobe.....	June 8, 8 P.M.....	Grading, 9600 cu. yds. excavation; 8,000 lin. ft. stone curb; 13,800 sq. yds. brick or asphalt block, S. Ligonier St.....	Jas. C. Dursler, Sec'y Council.
Indiana.... Crawfordsville.....	June 8.....	Paving 5 blocks on College, Water and Walnut Sts.....	B. R. Johnston, City Engineer.
Indiana.... Wabash.....	June 8.....	Constructing cement walks on certain streets.....	Fremont McLees, City Clerk.
Indiana.... Portland.....	June 9.....	Constructing 8 gravel and 6 stone roads.....	County Auditor.
Ohio.... Port Clinton.....	June 10.....	Brick or other material on concrete, Canal St.....	J. J. Huber, Clk. Bd. Pub. Serv.
Wisconsin.... Janesville.....	June 11, 2 P.M.....	Laying 3,000 sq. yds. granite macadam, St. Lawr. Ave.....	C. V. Kerch, City Engineer.
Florida.... Fort Barrancas.....	June 15, 11 A.M.....	Constructing concrete walks.....	Capt. D. W. Hand, U. S. Army
Dist. of Col'bria. Washington.....	June 15, noon.....	Asphalt block and bitu. pavements, macadam roads, concrete walks, Walter Reed, Army Gen. Hosp.....	Capt. H. L. Pettus, Q. M., U. S. A.
New Jersey.... New Brunswick.....	June 15, 8 P.M.....	Improving 28,000 sq. yds. street paving, 2,800 lin. ft. curb, etc.	John T. Kemp, St. Com'r.
Ohio.... Warren.....	June 22.....	Asphalt block paving, etc., Elm St.; vit. brick, N. Tod Av.....	E. M. Milligan, City Eng.
Florida.... Fort Barrancas.....	July 1, 11 A.M.....	Constructing new and resurfacing old roads.....	Capt. D. W. Hand, U. S. Army.

Water Supply

Texas..... Alta Loma.....	May 28, noon.....	Furn. and erecting, complete mach. equipment of air-lift pumping station, inc. 1,200 and 700 cu. ft. air compressors; 200 h.p. water tube boiler, etc., inc. 16,615 ft. air pipe to wells.....	J. D. Kelley, City Sec'y, Galveston.
New York.... Owego.....	May 29, noon.....	Bldg. 2,000,000-gal earth reservoir, concrete lining.....	T. Chalkley Hatton, Wilmington, Del., C. E.
Mississippi.... Columbus.....	May 30.....	Plans, etc., for bldg. 50,000-gal. steel tank on 100-ft. steel tower.....	H. L. Whiteford, Pres. Indus. Inst.
Ohio.... Massillon.....	May 30.....	Constructing water works plant.....	Harold Howald, City Eng.
Virginia.... Fort Monroe.....	June 1, 10 A.M.....	Erecting four 50,000-gal. steel tanks on parapet.....	E. R. Tilton, Q. M., U. S. Army.
New York.... Syracuse.....	June 1, 1:30 P.M.....	Furn. c. i. pipe for conduit line from Skaneateles Lake and in city, \$5,000 each, for each 5,000 tons.....	F. T. Pierson, Sec'y Bd. C. & S.
California.... San Francisco.....	June 1, 11 A.M.....	Bldg. pump station, boilers, pumps, reservoir, flume, pipe, etc., at Presidio.....	Maj. G. McK. Williamson, U. S. A.
Illinois.... Elgin.....	June 1, 5 P.M.....	Furnishing \$2,500 worth of water meters, f. o. b. Elgin.....	R. R. Parkin, Supt. Water Works.
New York.... Yonkers.....	June 1, 8 P.M.....	Furn. 20,400 lbs. 20, 22-in. flanged pipe, and 5,600 lbs. specials; also bell and spigot pipe: 7 tons 30-in., 88 tons 24-in., 14 tons 12-in., 210 tons 6-in., and 27,000 lbs. 24-in. specials, del. on dock Yonkers by July 15, with privilege of increasing or diminishing amount 50 per cent.....	Board of Contract and Supply.
North Dakota.... Grand Forks.....	June 1, 8 P.M.....	Laying water mains on several streets.....	W. V. O'Connor, City Clerk.
North Carolina.... Shelby.....	June 1.....	Constructing water works.....	H. E. Knox, Engineer.
Illinois.... Grafton.....	June 1.....	Constructing \$22,000 water works and electric light plant.....	W. S. Merkel, St. Louis, Mo., C. E.
Texas.... Dallas.....	June 1.....	Bldg. pumping station; C. A. Gill, Architect.....	J. B. Winslett, City Secretary.
Texas.... Galveston.....	June 1.....	Furn. 8 tons, 10-in.: 34 tons, 6-in., c. i. pipe, belt and spigot pattern; eight 6 x 6, two 10 x 6 Ts; two 10-in.; four 6-in. plugs.....	John D. Kelley, City Sec'y.
Dist. of Col'bria. Washington.....	June 2, 10:30 A.M.....	Furn. c. i. pipe, etc., fire hydrants, gate valves, etc.....	Col. H. F. Hodges, Isth. Canal Com'n.
New York.... New York.....	June 2, 11 A.M.....	Constructing Rondout siphon, a deep-pressure tunnel lined with concrete, 14 $\frac{1}{2}$ ft. inside diam.; 23,360 ft. long.....	Board of Water Supply.
Ohio.... Cincinnati.....	June 2, noon.....	Furnishing, etc., c. i. pipe, etc.....	Aug. Herrmann, Pres. Water Bd.
North Dakota.... Grafton.....	June 2, noon.....	Bldg. steel tower and tank; sinking artesian well.....	H. A. LaMoure, Supt. Home for F. M.
Wisconsin.... Milwaukee.....	June 4, 10:30 A.M.....	Remodeling North Point pumping station.....	C. J. Poetsch, Chm. Bd. Pub. Wks.
Indiana.... Michigan City.....	June 5.....	Bldg. sub. intake crib and laying 30-in. intake; \$45,000.....	Fred. C. Miller, Sec'y L. M. Water Co.
Dist. of Col'bria. Washington.....	June 6, noon.....	Furnishing cast-iron water pipe.....	Jay J. Morrow, Eng. Com.
Nevada.... Carson City.....	June 6, noon.....	Bldg. concrete reservoir in Vearoy Canyon, inc. placing 50 cu. yds. concrete in 4 walls and 24 x 30 ft. floor; also furn. 5,000 ft. Converse or Mathewson lock joint pipe.....	State Bd. Capitol Commissioners.
Missouri.... Neosho.....	June 6, 2 P.M.....	Constructing reservoir and pipe system, U. S. Fish Sta.....	Com'r of Fisheries, Wash., D. C.
North Dakota.... Velva.....	June 8, 8 P.M.....	Constructing water works system, inc. concrete reservoir, gravity and pressure pipe line, building, gasoline engine, pump, well, etc.....	J. E. Henkle, Mayor.
New York.... Rome.....	June 10, noon.....	Furn. 3,745 net tons c. i. pipe, 12 tons specials.....	Knight & Hopkins, Eng.
Maryland.... Baltimore.....	June 10.....	Bldg. 225,000,000-gal. high-service reservoir and diversion sewer, inc. 687,000 cu. yds. exc., 282,000 cu. yds. rolled embankment; 2,000 cu. yds. cement, etc.....	J. Barry Mahool, Mayor.
Louisiana.... Fort St. Philip.....	June 15, 10 A.M.....	Constructing water and sewer systems at post.....	Capt. Arthur Cranston, U. S. Army
Oklahoma.... Edmond.....	June 15, noon.....	Furn. material and machinery for complete water works system, inc. two 125 h. p. tubular boilers, two duplex steam pumps, straight-line air compressor, feed-water heater, two boiler feed pumps, 25 fire hydrants, 15 gate valves, 250 tons c. i. pipe.....	O'Neill Eng. Co., Dallas, Tex.
Ohio.... Cincinnati.....	June 16, noon.....	Laying c. i. pipe, etc., on Queen City Ave., etc.....	Ch. Eng. Water Works Trus.
Massachusetts.... Springfield.....	June 18, 2 P.M.....	Constructing covered masonry reservoir with gate houses, etc., cont. No. 3 L. R. W. S., in Agawam, 5 miles away, reservoir to cover 92,000 sq. ft., 26 ft. deep.....	C. H. Bennett, Chm. Bd. Wat. Com.
Michigan.... Grand Rapids.....	June 25.....	Furn. 12,000,000-gal. pump; cost, \$80,000.....	S. A. Freshney, Bd. Pub. Wks.
Ontario.... Ottawa.....	July 8, 4:30 P.M.....	Constructing a movable dam.....	Fred. Gelinas, Sec'y Dept. Pub. Wks.
California.... Los Angeles.....	July 17.....	Bldg. Jawbone div. Los Angeles aqueduct, cap. 400 second ft., inc. 43,000 lin. ft. lined tunnel; 60,000 ft. lined conduit; 340,000 cu. yds. excavation, etc.....	H. B. Ferris, Bd. Pub. Wks.

Sewerage

New York.... New York.....	May 28, 11 A.M.....	Reconstructing sewers and bldg. sewer basins in various sts.....	Louis F. Haffen, Pres. Boro. Bronx.
Ohio.... Dayton.....	May 28, noon.....	Sewer pipe, cement, iron pipe, etc., for Bd. Education.....	Wm. G. Haussler, Clk. Bd. Educ'n.
Ohio.... Chillicothe.....	May 28, noon.....	Constructing 3,000 ft. rein. concrete storm sewer; cost, \$30,000.....	H. M. Redd, City Engineer.
Pennsylvania.... North Braddock.....	May 28, 3 P.M.....	Bldg. 325 ft., 18-in.; 350 ft., 12-in. pipe, etc., Bell Ave.....	C. A. Stewart, Boro. Eng.
Tennessee.... Johnson City....	May 28, 3:30 P.M.....	Bldg. trunk sewer, inc. 5,000 ft., 1,824, 24-in.; sub-drain, 2,200 ft., 8 to 15-in. sewer; manholes, Ys, etc.....	L. N. Wilson, Jr., City Eng'r.
Texas.... Galveston.....	May 28, 6 P.M.....	Bldg. complete, 36 x 60 in. rein. concrete drain.....	A. T. Dickey, City Engineer.
Indiana.... Valparaiso.....	May 29, 7 P.M.....	Bldg. 3,214 ft. vit. pipe sewer, av. depth, 9 ft.....	G. F. Stinchfield, City Eng'.
Missouri.... St. Louis.....	May 29, noon.....	Constructing sewers; Letting No. 9,060.....	W. B. Dryden, Sec'y Bd. Pub. Imp.
New York.... New York.....	June 1, 11 A.M.....	Reconstructing sewer, etc., 14th Ave., Whitestone.....	L. Gresser, Pres. Boro. Queens.
Ontario.... Osnabruck Centre.....	June 1, noon.....	Constructing Grantley Creek drain; cost, \$14,100.77.....	Magwood & Walker, Cornwall, Engineers.
California.... Livermore.....	June 1.....	Furn. mat. only for sewer system and disposal plant.....	F. J. Boland, Hanford, C. E.
Michigan.... Saginaw.....	June 1.....	Constructing pipe sewers, to cost \$25,000.....	R. W. Roberts, City Engineer.
North Carolina.... Shelby.....	June 1.....	Constructing a sewer system.....	H. E. Knox, City Engineer.
New Jersey.... Elizabeth.....	June 1.....	Bldg. intercepting sewer, inc. 12,000 ft. 28 to 44-in. brick sewer, 8 to 25 ft. deep; 4,000 ft. 10-15-in. pipe, 11 to 25 ft. deep; 15,000 cu. yds. rock exc.; 70 manholes, pumping plant, cap. 5,000 gals. per minute.....	W. H. Luster, Jr., City Surv.
Mississippi.... Vicksburg.....	June 1.....	Constructing sewers and paving, Mulberry, Clay & South Sts.....	C. R. Twiss, City Engineer.
Michigan.... Iron Mountain.....	June 2, 1 P.M.....	Bldg. 2,896 ft., 48-in. rein. concrete sewer.....	John B. Calvi, City Clerk.
Indiana.... Frankfort.....	June 2, 2 P.M.....	Constructing 12-in. pipe sewer.....	North Price, City Clerk.
New Jersey.... Bayonne.....	June 2, 8 P.M.....	Bldg. 2 sewers 650 ft. 30-24-in. concrete on piles, 2,000 ft., 24-12-in. vit. pipe; also 100 ft. 24-in. concrete on piles; 1,900 ft., 10-24-in. vit. pipe, etc.....	W. C. Hamilton, City Clerk.
Indiana.... Brazil.....	June 2.....	Constructing storm sewers, estimated to cost \$33,000.....	F. K. De Arrey, Clk. B. P. W.
Ohio.... Middletown.....	June 2.....	Furn. mat. and laying pipe sewers.....	John Kunz, Clk. Bd. Pub. Serv.
New York.... Brooklyn.....	June 3, 11 A.M.....	Constructing relief sewer, etc., various sts. & aves.; 3 to cost over \$350,000 each, one \$35,000.....	Bird S. Coler, Boro. President.
Pennsylvania.... Philadelphia.....	June 3.....	Schedule B, Main sewers; Schedule A, bridges.....	Geo. R. Stearns, Dir. Dept. P. W.
Ohio.... Coshocton.....	June 4, noon.....	Bldg. 8-in. sewer, Third St.; also one in Eighth St.....	R. M. Temple, Clk. Bd. Pub. Serv.
Kansas.... Atchison.....	June 4, 2 P.M.....	Bldg. septic tank, filter, contact beds for disp. plant, S. O. H.....	State Bd. Control, Topeka.
Pennsylvania.... Emsworth.....	June 4, 5 P.M.....	Bldg. 1,015 ft. 8-in. sewer, North Ave.; 450 ft. 8-in. Superior St.; 1,150 ft. 8-in. Wallaston Ave.; manholes, etc.....	McBride Sur. & Eng. Co., Ltd., Fitzsimons Bldg., Pittsburg.

Sewerage—Continued.

Indiana.....	Peru.....	June 5, 7:30 P.M.....	Constructing 8-ft. concrete sewer; cost, \$18,245.50.....	[Geo. F. Merley, Town Clerk,
Indiana.....	Sullivan.....	June 6, 1 P.M.....	Bldg. 5 concrete sewers through levee with flood gates, to be 4 to 8 ft. inside diam.: 60 to 70 ft. long.....	R. L. Bailey, County Surveyor.
South Dakota.....	Aberdeen.....	June 8.....	Constructing sewers ordered by Council.....	F. W. Raymond, City Auditor.
California.....	Oakland.....	June 10, 10 A.M.....	Bldg. intercepting sewer, 2d St., outlet Oak St.....	W. B. Fawcett, Sec'y Bd. Pub. Wks.
Maryland.....	Baltimore.....	June 10, 11 A.M.....	Bldg. high-service reservoir and diversion sewer.....	J. B. Mahool, Pres. Bd. Awards.
Michigan.....	Iron Mountain.....	June 12, 1 P.M.....	Bldg. 2,896 ft. 48-in. rein. concrete sewer.....	John B. Calvi, City Clerk.
Louisiana.....	Ft. St. Philip.....	June 15, 10 A.M.....	Constructing sewer and water system.....	Capt. Arthur C. Easton, U. S. Army
Ohio.....	Wauseon.....	June 15.....	Constructing sewer in District No. 2.....	L. H. Deyo, Clerk, B. P. S.
Louisiana.....	New Orleans.....	June 30, 3 P.M.....	Find. and erecting two 100 k.w., 250 volt, dir. con. generators; two 75 h.p., 250 volt motors; one 2,500,000-gal. turbine pump and 1,000,000-gal. triplex pump, to work against 125 ft. head, dir. con. to electric motor; 2,000,000 cen. pump; two 4,000,000 cen. pump units; two 5 h.p. 250 volt motors; one surface condenser, 6,500 lbs. steam per hr.; air pump; piping, valves, wiring, switchboard, etc.....	George G. Earl, Gen. Supt. S. & W. Board.
Virginia.....	Portsmouth.....	June 30.....	Bldg. sewers, 5th Ward; add to pump. sta., cost, \$110,000.....	Bascom Sykes, City Engineer.
New Jersey.....	Avalon.....	July 2.....	Constructing portion of sewer system; cost, \$8,000.....	R. L. Goff, Ocean City, Eng'r.

Public Buildings

New York.....	Brooklyn.....	May 27, 11 A.M.....	Alterations, additions, etc., Kings Co. Court House.....	Bird S. Coler, Boro. President.
Ohio.....	Pittsburg.....	May 28, noon.....	Bldg. 2-room brick school, Sub-dist. No. 2.....	Ed. Hammel, Bd. Educ., Monroe Tp.
Ohio.....	Waynesburg.....	May 28, noon.....	Bldg. school, Sub-dist. No. 4, Sandy Township.....	Jas. T. Hewitt, Bd. Educ., Sandy Tp.
Ohio.....	Akron.....	May 28, noon.....	Bldg. Central Police Station; Harster & Bliss, Archts.....	F. J. Boss, Clk. B. P. S.
New Jersey.....	Morris Plains.....	May 28, noon.....	Material and rebldg. nurses' home, damaged by fire.....	J. C. Eisele, Pres. Bd. Mgrs. St. Hosp.
New York.....	New York.....	May 28, 2:30 P.M.....	Bldg. staff house, ext. 2 infirmaries, Blackwells Island.....	R. W. Hebbard, Com'r Charities.
Texas.....	Houston.....	May 28, 3 P.M.....	Constructing complete, Federal Building.....	James Knox Taylor, Wash., D. C.
Nebraska.....	Valentine.....	May 28.....	Bldg. 2-story and base, 40 x 44 ft. addition to school.....	D. E. Sherman, Sec'y Sch. Dist. No. 1.
Massachusetts.....	Lowell.....	May 28.....	Erecting \$75,000 school at Highlands.....	J. F. Roarke, Clk., Bldg. Dept.
Ohio.....	Chardon.....	May 28.....	Ventilating and heating new high school.....	C. A. Mills, Clk. Bd. Educ.
Ohio.....	Toledo.....	May 29, noon.....	Heating plants for various school buildings.....	L. I. Donat, Clk. Bd. Educ.
Pennsylvania.....	Greensburg.....	May 29, 4 P.M.....	Bldg. two 8-room schools; W. G. Sloan, Arch.	W. F. Wegley, Pres. School Bd.
Indiana.....	Marion.....	May 29.....	Building modern school in New Winchester.....	Board of Education.
Mississippi.....	Jackson.....	May 30.....	Erecting \$15,000 gymnasium for Industrial Institute.....	D. T. Gaston, Sec'y Bd. Trus. Indus. Inst.
Mississippi.....	Columbus.....	May 30.....	Bldg. \$15,000 gym., etc.; \$25,000 library Indus. Inst. & Col.	H. L. Whitfield, Pres. College.
Indiana.....	Adams.....	May 30.....	Bldg. 2-story 6-room school, 62 x 62 ft.; cost, \$14,000.	Wm. W. Robertson, Trustee.
Oklahoma.....	Bartlesville.....	May 30.....	Bldg. high school; also three 8-room buildings.....	C. L. Foulk, Clk., School Bd.
Mississippi.....	Agricultural Col.	May 31.....	Bldg. \$100,000 chapel and academic bldg., complete.....	A. J. Moore, Sec'y A. & M. College.
New York.....	New York.....	June 1, 11 A.M.....	Alterations, heating, etc., several school buildings.....	C. B. J. Snyder, Supt. School Bldgs.
Mississippi.....	Rolling Fork.....	June 1, noon.....	Bldg. another story to jail; also for new cages.....	Geo. W. West, Clk. Co. Superv.
Ohio.....	Toledo.....	June 1, noon.....	Remodeling Auburndale and Warren schools.....	L. I. Donat, Clk. Bd. Educ.
New York.....	New York.....	June 1, 2:30 P.M.....	Constructing, complete, new patho. bldg., Kings Co. Hops.	R. W. Hebbard, Com'r Charities.
Nebraska.....	Grand Island.....	June 1, 3 P.M.....	Constructing, complete, U. S. Post Office.....	James Knox Taylor, Wash., D. C.
Iowa.....	Cincinnati.....	June 1, 6 P.M.....	Bldg. two-story brick Town Hall; 30 x 80 ft.	H. S. Jaquiss, City Clerk.
Pennsylvania.....	Wilkes-Barre.....	June 1.....	Competitive plans for \$300,000 high school, 24 rooms and aud.	Dr. G. W. Guthrie, Pres. School Bd.
Massachusetts.....	Springfield.....	June 1.....	Bldg. public library; E. L. Tilton, Architect, New York City.	Public Library Building Committee.
Indiana.....	Farmstand.....	June 1.....	Erecting 6-room modern school on Morris St.	School Board.
Ohio.....	Youngstown.....	June 1.....	Bldg. 10-room fireproof stone and brick school; separate bids.	Kling & Zenk, Davis Blk., Archts.
Missouri.....	Kansas City.....	June 1.....	Erecting \$50,000 bldg. for Perry Orphan Boys' Home.....	Clifton B. Sloan, Sloan Bldg., Arch.
Iowa.....	Eagle Grove.....	June 1.....	Erecting school; steam heating separate.....	Fannie Filkins, Sec'y Bd. Educ.
West Virginia.....	Morgantown.....	June 1.....	Bldg. 4-story hosp., 40 x 70 ft., brick and stone; cost, \$30,000.	Elmer F. Jacobs, F. & M. Bull Bldg., Architect.
Ohio.....	Lima.....	June 1.....	Bldg. 8-room brick school; also 2-room addition.....	G. A. Herrett, Clk. Bd. Educ.
Mississippi.....	Natchez.....	June 1.....	Bldg. \$30,000 school; Geo. W. Ketteringham, Architect.	School Board.
Georgia.....	Greensboro.....	June 1.....	Erecting school building.....	J. H. McWhorter, Clerk.
Pennsylvania.....	Pen Argyl.....	June 1.....	Constructing new municipal building.....	Robt. Gamlin, Box 312, Chm. Com.
New York.....	Lockport.....	June 1.....	Bldg. Evans Memorial annex to hospital.....	City Clerk.
Utah.....	Eureka.....	June 1.....	Erecting library; Watkins & Birch, Salt Lake, Archts.....	Jas. D. Stack, Pres. Library Bd.
New York.....	Albany.....	June 2, noon.....	Constructing N. Y. State Education Building; cost \$1,500,000; Washington St.	R. H. Fuller, 63 Wm. St., N. Y. City.
Minnesota.....	Redwood Falls.....	June 2, 2 P.M.....	Bldg. County Home for Redwood County.....	L. P. Larson, County Auditor.
Minnesota.....	New Ulm.....	June 2, 3 P.M.....	Constructing, complete, U. S. Post Office.....	James Knox Taylor, Wash., D. C.
Virginia.....	Richmond.....	June 2.....	Comp. designs for comb. market and armory; also bids for erecting bldg., inc. arch's fee; cost, \$100,000.	C. E. Riling, Civ'l Engineer.
Ohio.....	Ashtabula.....	June 2.....	Heating 4 schools.....	C. E. Peck, Clk. Bd. Educ.
Nebraska.....	Bertrand.....	June 2.....	Bldg. 7-room school; Eisenraut Co., Sioux City, Archts.....	Hans Rasmussen, Sec'y Sch. Bd.
Michigan.....	Corunna.....	June 2.....	Bldg. \$25,000 high school; E. A. Brud, Lansing, Archt.....	W. A. Rosenkrans, Sec'y Bd. Educ'n.
New York.....	Albany.....	June 2.....	Bldg. State Education Bldg. on Washtn. Ave.....	Sec'y Trustees Public Bldg.
Michigan.....	Detroit.....	June 3, 3 P.M.....	Extending, remodeling, etc., Federal Building.....	James Knox Taylor, Wash., D. C.
New York.....	Schenectady.....	June 3.....	Bldg. 16-room school; new bids; \$80,000 appropriation.	Horace S. Van Voast, Mayor.
Wisconsin.....	Milwaukee.....	June 4, 10:30 A.M.....	Comp. plans branch public library; cost, complete, \$30,000.	C. J. Poetsch, Chm. Bd. Pub. Wks.
Minnesota.....	Crookston.....	June 4.....	Bldg. Franklin School; brick, 80 x 84 ft., 3 stories.	Bd. Educ. Ind. Sch. Dist. No. 1.
North Carolina.....	Greenville.....	June 4.....	Four bldgs.; E. Caro. Teachers' Train. School; cost, \$100,000.	Hook & Rogers, Charlotte, Arch.
Ohio.....	Cincinnati.....	June 5, noon.....	Alterations, etc., 4th floor of Court House.....	Fred Drehs, Clk. Co. Com'rs.
Ohio.....	Cleveland.....	June 6, noon.....	Bldg. public library; Edw. L. Tilton, N. Y. City, Arch.	Carl Lorenz, Sec'y Pub. Library Bd.
Iowa.....	Clinton.....	June 8, noon.....	Bldg. 2-story and base. Franklin school.....	John Morell & Son, Archs.
Ohio.....	Cincinnati.....	June 8, noon.....	Heating and ventilating system in Hughes high school.....	Dr. J. M. Withrow, Bd. Educ.
Texas.....	Prairie View.....	June 8, noon.....	Bldg. 3-story school; also plumbing and wiring.....	Smith & Schenk, Ft. Worth, Archs.
Alberta.....	Calgary.....	June 8, noon.....	Bldg. Gen. hospital; F. J. Lawson, Arch., Norman Blk.	Cot. Walker, Chm. Hospital Bd.
New Hampshire.....	Dover.....	June 8, 3 P.M.....	Constructing, complete, U. S. Post Office.....	James Knox Taylor, Wash., D. C.
New York.....	Cobleskill.....	June 8.....	Bldg. 2-story brick and t. c. almshouse; cost, \$28,000.	Oren Finch, Schenectady, Arch.
Wisconsin.....	Oshkosh.....	June 9, 2 P.M.....	Heating, plumbing, etc., Dale school.....	W. A. Marden, Chm. Bd. Pub. Wks.
West Virginia.....	Wheeling.....	June 9.....	Bldg. new high school on S. Chaplin St.....	Board of Education.
New Jersey.....	Hopewell.....	June 9.....	Bldg. addition to Co. workhouse for 48 prisoners.....	Jos. C. Harrison, Sec'y Bd. Freeh'r's.
California.....	Yreka.....	June 10, 10 A.M.....	Constructing a Hall of Records for Siskiyou County.	Board of County Supervisors.
New York.....	Fort St. John.....	June 10, 11 A.M.....	Const. admin. bldg., drill hall, gmn., heating, etc.	Constructing Quartermaster.
Pennsylvania.....	New Castle.....	June 10, noon.....	Bldg. 3-story 175 x 200 ft., brick, etc. high school; \$300,000.	W. G. Eckles, Architect.
New Jersey.....	Jersey City.....	June 10, 3 P.M.....	Interior work for new Court House, etc.	A. J. Clements, Sec'y Bd. Com.
West Virginia.....	Wheeling.....	June 10, 4 P.M.....	Building high school; also plans for building.	Walter H. Hall, Clk. Bd. Educ.
New York.....	A Sable Forks.....	June 10.....	Bldg. 2-story and basement school; 72 x 78 ft.	F. L. Kemps, Clk., Bd. Educ.
Tennessee.....	Dyersburg.....	June 10.....	Bldg. addition to school; also heating, etc.	M. W. Ewell, Mayor.
Texas.....	Ft. Sam Houston.....	June 11, 11 A.M.....	Bldg. 8 cavalry stables, 2 other stables, bakery.	L. J. Fleming, Constr. O. M.
New York.....	Wampsville.....	June 11.....	Bldg. County Court House and jail.	J. A. Loyster, Chm. Bd. Co. Superv.
California.....	Los Angeles.....	June 12, 9 A.M.....	Erecting dormitory bldg., Cal. Polytechnic School.	California Polytechnic School.
Colorado.....	Cheyenne Wells.....	June 12, noon.....	Erecting Court House for Cheyenne County.	John J. Huddart, Denver, Arch.
Missouri.....	St. Charles.....	June 12, 3 P.M.....	Constructing, complete, U. S. Post Office.	James Knox Taylor, Wash., D. C.
Alberta.....	Edmonton.....	June 13, noon.....	Erecting Court House.	John Stocks, Dep. Min. Pub. Wks.
Virginia.....	Bristol.....	June 15.....	Erecting \$50,000 Court House.	J. H. Gose, City Clerk.
California.....	Lemon Grove.....	June 15.....	Building 2-story school; 48 x 72 ft., etc.	Kennedy & Craine, San Diego, Archt.
Kansas.....	Newton.....	June 17, 3 P.M.....	Constructing, complete, U. S. Post Office.	James Knox Taylor, Wash., D. C.
Iowa.....	Waterloo.....	June 17.....	Erecting new school. East Waterloo.	H. B. White, 224½ E. 4th St.
Utah.....	Provo.....	June 22, 3 P.M.....	Constructing, complete, U. S. Post Office.	James Knox Taylor, Wash., D. C.
Arkansas.....	Fayetteville.....	June 24, 3 P.M.....	Constructing, complete, U. S. Post Office.	James Knox Taylor, Wash., D. C.
Texas.....	Greenville.....	June 25, 3 P.M.....	Constructing, complete, U. S. Post Office.	James Knox Taylor, Wash., D. C.
Oregon.....	Portland.....	June 25.....	Plans for \$250,000 high school.	Board of Education.
South Carolina.....	Sumter.....	June 29, 3 P.M.....	Constructing, complete, U. S. Post Office.	James Knox Taylor, Wash., D. C.
Pennsylvania.....	Meadville.....	June 30, 3 P.M.....	Constructing, complete, U. S. Post Office.	James Knox Taylor, Wash., D. C.
Wisconsin.....	Rhineland.....	July 20.....	Constructing 3-story Court House; cost, \$100,000; stone, fire-proof construction, 120x95 ft. A. Taylor, Chm. Co. Com'rs.	C. H. Tegen, Manitowoc, Arch.
Minnesota.....	St. Paul.....	August 1.....	Competitive plans for Mechanical Arts High School, 62 rooms; Architects all over country invited to submit plans.	Com. on Schools, School Bd.

Bridges

Indiana.....	Rushville.....	May 28, 11 A.M.....	Bldg. and repairing number of bridges.....	County Commissioners.
Ohio.....	Upper Sandusky.....	May 28, noon.....	Bldg. 150 ft. steel span; also 2 abut., Pitt twp.....	J. N. Traxler, County Auditor.
Pennsylvania.....	Sagamore.....	May 28, noon.....	Constructing bridge over Plum Creek.....	Benj. J. Oswald, Clk. Co. Com'rs.
Michigan.....	Ionia.....	May 29, 10 A.M.....	Bldg one steel span, concrete floor, abutment, etc.	C. I. Goodwin, Cr. of Co. Clerk.
Illinois.....	Monticello.....	May 29, noon.....	Building wooden bridge over main ditch, St. Dr. Dist.	County Clerk.
North Dakota.....	Wahpeton.....	May 29, P.M.....	Building 5 bridges; also repairing 5 bridges.	E. S. Cameron, County Auditor.
New York.....	Croton Falls.....	May 29.....	Building 2 hwy. bridges; also repairing bridge.	E. J. Wulff, Tarrytown, Co. Eng'r.
Minnesota.....	Lanesboro.....	May 30, noon.....	Bldg. wooden bridges over Root River at Whalen.	P. Abrahamson, Clk. Supervisors.
Indiana.....	Newport.....	June 1, 10 A.M.....	Constructing bridge and abutments.	County Auditor.
California.....	Santa Barbara.....	June 1, 11 A.M.....	Constructing bridge over Santa Maria River.	C. A. Hunt, County Clerk.
Minnesota.....	Minneapolis.....	June 1, 11 A.M.....	Building bridge No. 11.....	Hugh R. Scott, County Auditor.
Indiana.....	Kentland.....	June 1, noon.....	Constructing 5 concrete bridges and abutments.	Louis S. Alter, Engineer.
Indiana.....	Rensselaer.....	June 1, noon.....	Bldg. wooden pile bridge, 135 x 16 ft., Wheatfield twp.	J. N. Leatherman, County Auditor.
Ohio.....	Chillicothe.....	June 1, noon.....	Bldg. concrete arch culvert in Springfield twp.	Chas. H. Pinto, County Auditor.
Mississippi.....	Monticello.....	June 1, 1 P.M.....	Bldg. iron bridge; also repairs to iron bridge.	W. H. Speights, Clk. Bd. Supervisors.
Ohio.....	New Philadelphia.....	June 1, 1 P.M.....	Concrete superstructure, Wayne twp.; also culvert, Union twp.	Clyde J. Knisely, County Eng'r.
Indiana.....	Salem.....	June 1, 1:30 P.M.....	Bldg. 2 steel bridges; Sam G. Ellis, Co. Auditor.	Granville Chastain, Chm. Co. Com'rs.
Pennsylvania.....	Spartansburg.....	June 1, 2 P.M.....	Constructing concrete arch bridge for Summit twp.	L. C. Schuwerh.
Indiana.....	Lebanon.....	June 1.....	Constructing 8 bridges.....	County Commissioners.
Oklahoma.....	Ardmore.....	June 1.....	Constructing bridges for Carter County.	Wm. B. Frame, County Clerk.
South Dakota.....	Yankton.....	June 1.....	Bldg. concrete bridge; new bids; low on old, \$5,800.	W. L. Bruce, City Engineer.
North Dakota.....	Maudan.....	June 1.....	Bldg. bridges, inc. approaches; steel or combination.	H. J. Tavis, County Auditor.
Indiana.....	Greenfield.....	June 1.....	Repair of six bridges.	C. H. Troy, County Auditor.
Pennsylvania.....	Bedford.....	June 2, 10 A.M.....	Constructing one-span steel bridge over creek, E. St. Clair twp.	J. F. Mickel, Clk. Co. Com'rs.
Ohio.....	Lima.....	June 2, noon.....	Bldg. long steel bridge over river; also stone or conc. abut.	G. W. Johnston, Chm. Co. Com'rs.
Indiana.....	Vincennes.....	June 2, 2 P.M.....	Constructing bridge in Busseron township.	John T. Scott, County Auditor.
Mississippi.....	Vicksburg.....	June 2.....	Building 2 wooden bridges.	J. D. Laughlin, Chancery Clerk.
South Dakota.....	Vermillion.....	June 3, 10 A.M.....	Bldg. 10 steel bridges over Clay Creek ditch.	F. A. Erickson, County Auditor.
Ohio.....	Col. imbus.....	June 3, noon.....	Bldg. 2 sub and superstructures; also concrete arch.	F. M. Sayre, County Auditor.
Missouri.....	Nevada.....	June 3.....	Bldg. 60-ft. steel span and 40-ft. steel approach.	James M. Clock, County Eng.
Pennsylvania.....	Philadelphia.....	June 3.....	Constructing bridges, Schedule A, etc., app., \$297,000.	Geo. R. Stearns, Dir. Dept. Pub. Wks.
Ohio.....	Gallipolis.....	June 4, noon.....	Bridge work in various townships.	F. F. Thorlley, County Auditor.
Ohio.....	Wakeman.....	June 4, noon.....	Bldg. rein. concrete bridge floor over race at Webb St.	Wilbur J. Watson, Clev'd., Cons. Eng.
Ohio.....	Tiffin.....	June 4, 1 P.M.....	Bldg. 17 new bridges in 12 twp.; repairing 7 others.	D. O. Batchelor, County Auditor.
Massachusetts.....	Russell.....	June 4, 2 P.M.....	Repair and reflooring Monroe St. bridge.	C. J. Peters, Engineer.
Pennsylvania.....	Harrisburg.....	June 5.....	Constructing bridge over Westfield River.	E. D. Parks, Sec'y Bridge Com'n
Colorado.....	Golden.....	June 5, 5 P.M.....	Bldg. rein. concrete viaduct in Wash'ton Co.	Jos. W. Hunter, St. Ry. Com'r.
Pennsylvania.....	Franklin.....	June 9, noon.....	Bldg. steel bridge over Bear creek; span 40 ft., rdwy., 16 ft. abut., 8 ft. above bed of creek; one wing 20 in., one 12 in. drop.	H. J. Juchem, County Clerk.
Ontario.....	Ottawa.....	June 9.....	Constructing bridge in Scrubgrass township.	County Commissioners.
Ohio.....	Cleveland.....	June 10, 11 A.M.....	Bldg. steel superstructures and floor system, complete, for bridge in Dist A, over 11 rivers.	P. E. Ryan, Sec'y Com'rs Tanse, Ry.
New York.....	Buffalo.....	June 10, noon.....	Constructing 4 county bridges, 2 culverts.	Wm. F. Black, Clk. Bd. Co. Com'rs.
Washington.....	Spokane.....	June 10, 2 P.M.....	Constructing rein. concrete viaduct for hwy. and st. ry. travel, 1,400 ft. long, 20 ft. rdwy.; two 5-ft. walks.	West N. Y. Constr. Co., Co. Brisbane Building.
Idaho.....	Kamiah.....	June 10.....	Perm. imp. 783 ft. long, Sprague Ave., 4 plans steel girder or rein. concrete viaduct, rein. concrete retaining wall, earth or rock fill; dry retaining walls, rock fill.	J. T. O'Brien, Sec'y Bd. Pub. Wks.
Illinois.....	Grafton.....	June 1.....	Bldg. \$12,000 bridge over Clearwater River, Kamiah Br. Co.	Chas. Thompson, Omaha, Neb., C. E.
Ohio.....	Sandusky.....	June 1.....	All metal work for super. of 12 steel hwy. bridges over north shore channel; 5 under one cont., others separate.	I. J. Bryan, Clk. Sanitary Dist.
Ohio.....	Hamilton.....	June 11, 10 A.M.....	Repairing west abutment, bridge, Milford township.	J. E. Brate, County Auditor.
Ohio.....	Jefferson.....	June 15, 1 P.M.....	Bldg. retaining wall, bridge over creek, Sheffield township.	J. S. Matson, County Surv.
Ohio.....	St. Clairsville.....	June 15.....	Bldg. stone or concrete substructures, 7 bridges, superstructures 2 of them; concrete floors on all.	A. W. Beatty, County Auditor.

Lighting and Electricity

Oklahoma.....	Bartlesville.....	May 30.....	Bldg. 4 schools; special attention to lighting.	C. L. Foulk, Clk., School Bd.
Ohio.....	Carthage.....	June 1, noon.....	New arc lighting system; inc. generator, switch board, wiring, and arc lamp equipment; one or all items.	John Kuderer, Sec'y Trus. Pub. Affrs.
Illinois.....	Grafton.....	June 1.....	Constructing \$22,000 electric light plant and water works.	W. H. Journey, Mayor.
Ohio.....	Sandusky.....	June 1.....	Furn. 3 or 4 boilers, 200 h.p., for power plant for Soldiers' and Sailors' Home; also steam pumps.	Daniel Dugan, Q. M. S. & S. Home.
Nevada.....	Reno.....	June 1.....	Bldg. brick power house, etc., Home for Aged and Indigent.	S. C. Gibson, Supt. Home for Aged.
Ontario.....	Toronto.....	June 2.....	Constructing steel transmission towers, line cable and erecting system, from Niagara Falls to Toronto, also to St. Thomas for Hydro-Elec. Power Com'n.	Adam Beck, Chm. Hy.-Elec. Pow. Co.
Nebraska.....	Seward.....	June 3.....	Material and apparatus for addition to electric light system, inc. brick addition, found, for machinery, Corliss engine, generator, exciter, switch board.	John Martz, Engineer.
Pennsylvania.....	Wilkes-Barre.....	June 5, 2 P.M.....	Electric light, fixtures, etc., new Court House, \$35,000.	McCormick & French, Archs.
Texas.....	Galveston.....	June 8, noon.....	Installing, etc., series are lamps on Galv. Co. Blvd.	John M. Murch, Co. Auditor.
Dist. of Col'bria	Washington.....	June 8.....	Furnishing electric motors for Isth. Canal Com'n.	Col. H. F. Hodges, Purch. Agt.
Texas.....	Prairie View.....	June 8.....	Electric wiring and plumbing, new bldg., A. & M. College.	A. & M. College, College Station.
Wisconsin.....	Oshkosh.....	June 9.....	Electric wiring, etc., Dale school.	A. G. Pittelkow, Omaha, Neb., Engr.
Utah.....	Ogden.....	June 10, 3 P.M.....	Conduit and electric wiring system, ext. to Federal Building.	James Knox Taylor, Wash., D. C.
New Jersey.....	Jersey City.....	June 10, 3 P.M.....	Bldg. and equipping power house, etc., new Court House.	Hugh Roberts, 1 Exch. Pl., Arch.
New York.....	Fort Slocum.....	June 10.....	Electric wiring, etc., adm. bldg., drill hall and gym.	Constructing Quartermaster.
Dist. of Col'bria	Washington.....	June 16, 10 A.M.....	Furn. quantity electrical hoist equipments, motors, etc., at Newport News, Va., and Quincy, Mass.	E. B. Rogers, P. M. Gen., U. S. Navy.
Mississippi.....	Natchez.....	June 17, 4 P.M.....	Contract for public lighting; 5 years from May 1, 1909.	W. O. Fowler, City Engineer.
Idaho.....	Minidoka.....	June 19.....	Furn. elec. apparatus for irrigation project; estimate, \$55,000 for immediate purchase, \$100,000 optional.	O. H. Ensign, Ch. Elec. Eng., 25 Carroll Blk., Madison, Wis.
Louisiana.....	New Orleans.....	June 30, 3 P.M.....	Electrical and pumping machinery, Algiers station.	F. S. Shields, Sec'y S. & W. Bd.

Miscellaneous

Pennsylvania.....	Scranton.....	May 28, 11 A.M.....	Furnishing a sprinkler.	C. R. Acker, Dir. Pub. Wks.
Ohio.....	Chardon.....	May 28, noon.....	Ventilating new high school.	C. A. Mills, Clk. Bd. Education.
Virginia.....	Ft. Monroe.....	June 1, 10 A.M.....	Filling in 21 cisterns.	Capt. E. R. Tilton, U. S. Army.
Indiana.....	Decatur.....	June 1, 10 A.M.....	Crushed stone and other turnpike supplies during year.	C. D. Lewton, County Auditor.
Ohio.....	Cleveland.....	June 1, noon.....	Machine shop and wood working equipment for Tech. H. S.	Geo. E. Myers, Clk. Bd. Educ.
Ohio.....	Sandusky.....	June 1, noon.....	Furn. 3 or 4 200-h.p. boilers and 400-h.p. feed-water heater.	Dan'l Dugan, Q. M., S. & S. Home.
Dist. of Col'bria	Washington.....	June 1.....	Furnishing 4,500,000 bbls. Portland cement.	Isthmian Canal Commission.
Ohio.....	Ashtabula.....	June 2, noon.....	Heating 4 school bldgs.; separate bids, or as whole.	C. E. Peck, Clk. Bd. Education.
Utah.....	Salt Lake City.....	June 2, 2 P.M.....	Exc. for tunnel; rock, earth, rip rap, etc.	Wm. J. Lynch, Pres. Bd. Land Com.
Pennsylvania.....	Easton.....	June 2.....	Furnishing \$2,000 worth of new hose.	Fire Committee of Council.
New Jersey.....	Trenton.....	June 5.....	Erecting hothouse in Cadwallader Park.	Edw. B. Fletcher, Clk. Pk. Com'rs.
Louisiana.....	New Orleans.....	June 6, 11 A.M.....	Furnishing 10,000 tons of rock for New Orleans harbor.	Capt. J. F. McIndoe, U. S. Eng'rs.
Washington.....	Brewerton.....	June 6, 11 A.M.....	Furn. and install. 5,000 cu. ft. air compressor, etc., \$27,500.	Commandant, Navy Yard.
Ontario.....	Ottawa.....	June 8, noon.....	Furn. 45,000 iron posts; also 1,300 iron posts for use on survey of Dominion lands, in specified lots.	P. G. Keyes Sec'y Dept. Interior.
Dist. of Col'bria	Washington.....	June 8.....	Furnishing hose, nozzles and rubber gloves.	Col. H. F. Hodges, Canal Com'n.
Utah.....	Ogden.....	June 9, 3 P.M.....	Low-pres. steam heat. appar., exten. to Federal Bldg.	James Knox Taylor, Wash., D. C.
Alabama.....	Fort Morgan.....	June 15.....	Bldg. wharf, Fort Gaines; also ext. one, etc., Fort Morgan.	Capt. L. F. Garrard, Jr., U. S. Army.
Manitoba.....	Winnipeg.....	July 8.....	Constructing movable dam, steel service and highway bridge, repair shop, etc., at St. Andrews Rapids, Red River.	Fred. Gelinas, Ottawa, Ont., D. P. W.

STREET IMPROVEMENTS

Ensley, Ala.—The question of a new boulevard between the city and East Lake is being discussed, and work will soon be commenced.—Address Engineer Heidel.

Ft. Smith Ark.—Estimates are being prepared for paving certain streets in District No. 6.—Rudolph Ney, Commissioner.

Bids will be received, June 10, for the purchase of \$550,000 street improvement and sewer bonds.—H. E. Kelley, Chairman, Board of Improvements.

Fairfield, Cal.—The citizens of Solano County will vote on the issue of bonds for improving county roads.—Address County Auditor.

Pasadena, Cal.—Council has ordered that the Pacific Electric Company pave the roadway between its tracks on North Fair Oaks avenue, with asphalt.

Riverside, Cal.—The County Supervisors are in favor of new road to Ontario; Mayor Evans can be addressed.

Sacramento, Cal.—The Board of City Trustees has decided to improve F street, from the easterly line of Twentieth street to the westerly line of Thirty-first street, by constructing an oiled macadam road.

Hartford, Conn.—Council has adopted resolutions authorizing the establishing of new lines of curb, sidewalk and gutter on Asylum avenue, between Woodland street and Prospect avenue; on both sides of Tremont street, between Farmington avenue and Cone street; and a new curb line on the corners of Farmington avenue and Gillette street, and Garden and Collins streets; the macadamizing of Tremont street was also ordered.

New London, Conn.—The taxpayers have voted to expend \$10,000 for the extension of brick pavements.

Farnhurst, Del.—The Levy Court has received a communication from the Trustees of the Delaware State Hospital, asking that the county build a macadam road connecting Hare's Corner and New Castle roads, between this place and Stoeckle's Corner.

Augusta, Ga.—A movement is on foot for the construction of a new boulevard from this city to Aiken, S. C.; Colonel Carey Lamar and J. M. Adams are among those interested.

Aurora, Ill.—Council will expend \$20,000 in improving streets by paving.—Fred Fauth, Chairman of the Board.

The Traction company has received permission for paving of Clair street, Fifth street, Clark street and Pennsylvania avenue; the company has also petitioned for permission to pave Center avenue, Grant place and Fifth street.

Carbonville, Ill.—E. A. Cox, City Engineer, has prepared plans for brick paving, on concrete foundations, and laying granitoid gutters on several streets.

Mason City, Ill.—Estimates for paving various streets with brick, on a concrete foundation, have been prepared by A. N. Johnson, State Engineer.

Sterling, Ill.—The Aldermen of the Fourth and Fifth Wards desire three blocks of macadam on West Fifth street, from Avenue D to Avenue G.

Lafayette, Ind.—The matter of macadamizing Riverside road, from the city to the State Soldiers' Home, is being considered by the County Commissioners.

Muncie, Ind.—The Board of Public Works recently received a petition from North Jefferson street residents asking for the construction of a cement gutter and curb; the matter of constructing a sewer in Hoyt avenue, from Gharkey street to Eleventh street, is also being considered.

Terre Haute, Ind.—The Board of Public Works has decided to pave a number of streets, including Maple avenue, South Ninth and Walnut streets.

City Engineer E. B. Smith recommends the repaving of Wabash avenue.

Topeka, Kan.—Locust street, from Fourth street to Eighth avenue, is to be paved, and Sixth avenue, from the city limits to the viaduct, will be paved.

Wichita, Kan.—Market street, from Elm street to Twenty-first street, is to be paved.

Louisville, Ky.—The Board of Works has sent out to the various contractors and asphalt companies copies of the new specifications adopted by the General Council for original asphalt street construction. The Board of Works will advertise in a few days for about \$100,000 worth of work.

Lewiston, Me.—The Street Commissioners are considering the paving of Main street, from the corner of Bates to the upper end of Hospital Square.

Towson, Md.—The Highway Commissioners of this town recently received a petition from Mt. Washington residents asking that Rogers avenue, from Southbend avenue to Greenspring avenue, be repaved; Roads Engineer Shirley was instructed to draw up plans.

Chicopee, Mass.—The Finance Committee reported to the Board of Aldermen Alderman Corcoran's order for an appropriation

of \$25,000 and asked that a committee be appointed to visit other cities and investigate the kinds of block paving and the methods of laying it; this committee is composed of Mayor Beauchamp, Superintendent of Streets Fugere, City Engineer Cobb, City Solicitor White, Aldermen Granfield, Ash, Gaylord and E. L. Davis.

An order calling for an expenditure of \$2,600 for macadamizing Belcher street, from East Main to Walnut, has passed to its final reading; also order for \$1,000 for macadamizing Sheridan street, from Emmet street to the junction with the Ludlow road; sidewalk orders for \$200 for concrete on the east side of Chestnut street, \$360 for a sidewalk on the south side of South street from Union to Center street, \$250 for a sidewalk in Erline street, Willimansett, and \$260 for the sidewalk on Union street, from South to Center, were all passed to their final readings.

Everett, Mass.—An ordinance appropriating \$60,000 for macadamizing and paving several streets has been passed by Council.

Lawrence, Mass.—Bids will be called in about two weeks for paving Essex street with wooden blocks.—Arthur D. Marble, City Engineer.

Lowell, Mass.—A joint order to borrow \$12,000 for macadamizing Royal and Howard streets and Smith street, from Branch to Westford streets, has been adopted by Council.

Norton, Mass.—At a special town meeting recently it was voted to improve roads throughout this section as soon as possible.

Pontiac, Mich.—William J. Fisher, City Engineer, is preparing plans for the construction of 4,000 feet of brick paving on Oakland avenue and Water street, on a 6-inch concrete base, with 1,000 feet of curbing, manholes, etc.; estimated cost, \$10,000; bids will probably soon be asked.

Buhl, Minn.—The Village Trustees are planning the paving with macadam of about six blocks of the principal business street in the town, known as State street.

North Branch, Minn.—Council has directed bids to be asked for constructing cement walks on certain streets.—Edwin E. Elmgreen, Recorder.

St. Paul, Minn.—Sixth street, from Smith avenue to Washington street, will probably be repaved with asphalt.

The County Surveyor has been instructed to prepare plans and specifications for the construction of a clay and gravel roadway 20 feet wide on Hamlin avenue, from the city limits to Harrison road, and for the repair of several roads.—Edward G. Krahmer, County Auditor.

Long Beach, Miss.—The Town Council has passed an ordinance for issue of bonds for the improvement and drainage of the streets.

Camden, N. J.—A special meeting of the East Side Improvement Association will shortly be held to take action relative to the paving of Federal street, between Cooper's creek and Twenty-seventh street.

Hoboken, N. J.—Application has been made to Council to have the streets surrounding the City Hall paved with either asphalt or wooden blocks.

Newton, N. J.—The County Board of Freeholders has received a petition from Hardyston Township asking the county to join with the town in the construction of six miles of macadam road, from the Passaic County line to Franklin Furnace; Frankford Township also asks the aid of the county in the construction of three miles of macadam road.

River Vale, N. J.—The people of this township recently voted to bond for \$25,000 for macadamizing purposes.

Albany, N. Y.—Council has passed an ordinance authorizing and directing the construction of a vitrified pipe sewer under the south sidewalk of Livingston avenue, from a point 621 feet west of the west line of Ontario street westerly about 200 feet; also the paving of Clinton avenue, from Quail street to Manning boulevard, North, and the laying of sewers and the paving of Stanwix street, between Second avenue and Delaware avenue.—Frederick U. Bresler, Clerk of Common Council.

Buffalo, N. Y.—Resolutions have been adopted by Council for the improvement of the following streets: Purdy street, 24 feet wide, by paving from the north curb line of Laurel street to the south line of Utica street; Gibson street, 28 feet wide, by paving, from north curb line of Broadway to the south line of Stanislaus street, with the German Rock Company's standard asphalt, on concrete base (specifications "B"), estimated cost, \$15,064; Grey street, 22 feet wide, by repaving, from north curb line of Broadway to south line of Genesee street, with German Rock Company's standard (specifications "A"), asphalt, except the crossing of Sycamore street, estimated cost, \$9,414; Cedar street, 28 feet wide, by repaving with Trinidad asphalt (specifications "A"), from north curb line of Swan street to south curb line of William street, ex-

cept the crossings of North Division and Eagle streets, and inside; street car tracks and 2 feet outside; estimated cost, \$9,346; Hoffman alley, 7 and 19 feet wide, by paving, from the southerly curb line of Hamilton street to the south end of the alley.

The matter of paving Broadway, from Herman street to Bailey avenue, is now being considered by Committee on Streets.

The State Engineer has decided to improve Clinton street by paving with brick.—Col. F. G. Ward, Commissioner of Public Works.

Canastota, N. Y.—Plans are under discussion for the construction of a new road through this town.—Address A. R. Nichols.

Cohoes, N. Y.—Senator Grattan has received information that plans are completed for the improvement of the highway leading from the Loudonville road to the Cohoes city line.

Grand Island (P. O. Tracy), N. Y.—Better roads for this section are being discussed.

Herkimer, N. Y.—A resolution will be presented for adoption at the special session of the Board of Supervisors of Herkimer County for an additional appropriation of \$30,000 for new road to be ten miles in length.

Hornell, N. Y.—Plans are being considered for the improvement of the roadway between this town and Almond, between what is known as the Red Bridges.

Mechanicsville, N. Y.—At the special village election recently the proposition to pave a portion of South Main street was carried.

Bonds, \$5,500, have been authorized for street improvements.—Address Village Clerk.

Newburgh, N. Y.—The paving of Liberty street, from South street northward to Leroy place, is being considered by Council.

New York, N. Y.—\$3,000,000 has been appropriated for the new Bronx River Parkway which is to run from Bronx Park, northward, along the Bronx river, through Mount Vernon, Bronxville, Tuckahoe, White Plains, North White Plains and Scarsdale.

The Ozone Park Board of Trade is considering building a new boulevard across Jamaica Bay, along the railroad trestle across the bay; a special meeting is to be held soon at the Town Hall in Jamaica for the purpose of discussing the matter.

Poughkeepsie, N. Y.—The Board of Public Works has decided to repave with vit. brick and lay curb on either side of Main street, from Catharine to Academy streets; also to set new curb 4x20 inches, with joints supported by at least one cubic foot of first-class concrete, on both sides of Cottage street, from North Clinton to Smith street.—R. J. Shields, Clerk.

Sloan, N. Y.—The taxpayers are to vote on the question of issuing \$50,000 bonds for paving purposes.

Syracuse, N. Y.—Plans are being prepared for paving Kirk and McLennan avenues, from Salina street to Midland avenue.

Troy, N. Y.—Property owners have made objections to the proposed paving with fire brick of Duke's alley, between Main and Polk streets.

Utica, N. Y.—Council has passed a resolution providing for the paving of Main street, from Mill street to North street.

Watertown, N. Y.—The taxpayers are urging the Board of Public Works to take up the matter of macadamizing streets in which taxpayers have placed curbs and gutters.

Watervliet, N. Y.—Third avenue is to be paved with vitrified brick.

Fayetteville, N. C.—The city has voted \$100,000 street paving bonds.

Goldsboro, N. C.—The city has decided to have Walnut street paved, at an estimated cost of \$10,000.

Ashland, O.—Council has passed ordinance for paving West Eighth street, from Cottage street to Erie Railroad; also the paving of Cottage street, from the Erie Railroad track to Ninth street.

Cleveland, O.—A new road is soon to be built around Ledge Hill by the County Commissioners.

Dayton, O.—The Central Trust and Safe Deposit Company, of Cincinnati, purchased \$40,000 Dayton street improvement bonds, at a premium of \$51.

East Liverpool, O.—Council has unanimously received petition and waiver for grading and paving Lisbon street, from the corporation line to the head of the thoroughfare, and referred matter to the Board of Public Works and the City Engineer for estimate of cost; Minerva street and Ambrose avenue will be graded, paved and sewer; Wellsville road is to be graded and paved, at an estimated cost of \$1,483, the city's share being \$988 and the traction company's \$495; Sheridan avenue will be improved from Chestnut to Lisbon street. Council is considering a petition of Robert Hailes and others for paving Pennsylvania avenue with brick.—J. C. Kelly, City Engineer.

Hamilton, O.—Council has passed an ordinance for the improvement of Maple avenue,

from Third street to Tenth street, with asphalt; South Second street, from Wood street to Crawford's Run, with sheet asphalt.—Thad Straub, Mayor.

Lakewood, O.—Bonds are to be issued by the village for paving Orchard avenue, from Detroit avenue to West Madison street, and Lakeland avenue, from Detroit avenue to Hilliard avenue.—B. H. Cook, Clerk.

New Bremen, O.—Bids will be received, June 10, for the purchase of \$13,000 5 per cent. street improvement bonds.—F. W. Schroeder, Jr., Village Clerk.

Wellsville, O.—Plans of Engineer George for an 11-foot paved roadway on a grade of 6 feet in 100 miles will probably be carried out; Seventeenth street is also to be paved.

Youngstown, O.—Council has passed a resolution for paving West avenue, from Garlick street to West Rayen avenue, and has also decided to have Garlick street improved from Mt. Pleasant to Lydia streets by grading and draining, and also to have Wick avenue straightened.

Ardmore, Okla.—Ordinances have been passed for paving certain streets.—A. L. Cruso, Chairman, Building Committee.

Dallas, Ore.—Work of paving streets will shortly begin, under the supervision of the City Engineer.

Bellevue, Pa.—N. W. Harris & Co., of New York, have been awarded \$100,000 4½ per cent. Bellevue sewer and street improvement bonds, at \$101,319.

Cheltenham, Pa.—Residents are protesting against the destruction of the trees on the main street in the suburb and the paving of that thoroughfare; the Township Commissioners recently passed an ordinance for paving and curbing.

Connellsville, Pa.—The first step in the movement to secure better roads in Dunbar Township was taken at a conference of the Township Supervisors, the Superintendents of the various Frick plants and Chief Engineer J. P. K. Miller, of the H. C. Frick Coke Company, at the Hotel Columbia, in New Haven, the principal object sought being the building of a macadamized road from the top of New Haven Hill to Uniontown, via Leisenring.

Dunbar, Pa.—The Supervisors of the Township have started a movement for the building of a macadamized road from the top of New Haven Hill to Uniontown, via Leisenring.

Greensburg, Pa.—The Street Committee recommends the final passage of ordinances providing for grading, paving and curbing a number of streets, including Hill street, Tunnel, Seminary avenue, and Walnut street.

Harrisburg, Pa.—The sum of \$50,000,000 is to be appropriated for improving State highways within the next ten years.—Jos. W. Hunter, State Highway Commissioner.

The paving and curbing of Thompson street, from Fourteenth to Fifteenth streets, has been authorized.

Hazleton, Pa.—No bids were received for the fifth city loan bonds, amounting to \$60,000; the money realized from the sale of these bonds is to be used for street paving, and unless they meet with a ready sale the object will be delayed.

Homestead, Pa.—Surveys have been completed showing that the borough still has about thirty-two miles of unpaved streets and alleys. It is figured that sooner or later the borough must become a part of Pittsburgh, and it is desired to have all the work done first. The borough can issue \$144,000 in bonds, and it is likely this will soon be done.

Kittanning, Pa.—New roads are planned at once in Armstrong County.

Philadelphia, Pa.—Carl P. Berger, 603 South Penn Square, has prepared plans for new boulevard at Mascher and Rockland streets.

Pittsburg, Pa.—The \$1,000,000 road bonds of Allegheny County have been formally purchased by a local syndicate at par and accrued interest. A few weeks ago the County Commissioners offered these bonds, but received no bids, and they were withdrawn. The sale of these bonds will permit the Allegheny County Commissioners to expend \$1,000,000 in county road construction, and will give employment to a large number of workmen.

Reading, Pa.—Mr. Keller has introduced a bill in Council providing for paving Douglas avenue, from Hampden to Thirteenth streets, with selected hill stone; the matter was referred to the Committee on Highways.

Greenwood, S. C.—The citizens have voted bonds for improving streets.

Clarksville, Tenn.—Council has decided to place Kentucky asphalt on Franklin street; many new concrete pavements were also ordered.

Memphis, Tenn.—Bids for paving a large number of streets will be opened by the Legislative Council at the next regular meeting in June.—J. H. Weatherford, City Engineer.

Brownwood, Tex.—An election is to be held

to vote on issue of \$200,000 Brown County road bonds.—Address Brown County Commissioners.

Goliad, Tex.—The county is in favor of good roads, and improvements are to be made as soon as possible.—J. H. Franklin can be addressed.

Hillsboro, Tex.—The Board of Trade has appointed a committee to secure funds to build six miles of macadam roads from this city to Peoria.—Address Secretary, Board of Trade.

Quanah, Tex.—The Attorney General has approved issue of \$8,000 street improvement bonds.

South Boston, Wis.—Bonds, \$80,000, have been voted for the improvements of streets and sidewalks.

Seattle, Wash.—R. H. Thomson, City Engineer, has reported the estimated cost of the following street improvements: Eighteenth avenue and other streets, grading and curbing, \$18,915; Aurora avenue and other streets, concrete sidewalks, \$31,300; Westview Drive and other streets, concrete sidewalks, \$4,900; East Madison street, planking, \$8,000; Fourth avenue, vitrified brick paving, \$57,000; Fourteenth avenue, West, and other streets, grading, etc., \$8,100; Eighth avenue and other streets, vitrified brick paving, \$61,800; West Sixty-first street and other streets, sewers, \$20,673; Lakeview avenue, concrete sidewalks, \$4,000; Broad street and other streets, concrete sidewalks, \$4,390; Grand boulevard and other streets, water mains, \$24,000.

Neenah, Wis.—The West End of Wisconsin avenue, which includes the block between Church and Main streets, will be paved with brick.

Racine, Wis.—It has been decided to pave Packard avenue with brick from the Chicago, Milwaukee and St. Paul Railway north to Washington avenue.

Superior, Wis.—A new 60-foot highway is to be built from Sixty-fourth street to the site of the new bridge across the St. Louis River.

SEWERAGE

Livermore, Cal.—Bonds have been voted for constructing a new sewer system for the town.

Oakland, Cal.—No bids were opened on May 6 by the Board of Public Works for the construction of the Oak street sewer. New bids will be asked.—F. C. Turner, City Engineer.

San Francisco, Cal.—Bonds, \$4,000,000, have been voted for a sewer system.—Marsden Manson, City Engineer.

Denver, Col.—A sewer is to be constructed to be known as the West and South Sanitary sewer, to extend from University Park to Argo, a distance of about 38 miles; engineers are at work on the plans.

Branford, Conn.—The matter of installing a sewer system is being considered; Health Officer Gaylord may be addressed.

Bridgeport, Conn.—Consulting Engineers Rudolph Hering and George W. Fuller, 170 Broadway, New York City, have submitted their report for a sewer system for the city; approximate cost, \$1,750,000; the ultimate cost of the system will be about \$3,000,000.

The Board of Aldermen is considering plans for obviating the nuisance caused by the depositing of sewage from the Lindley street sewer under the wharf of the Berkshire Mills Company; a 60-foot extension is proposed.

Mystic, Conn.—The residents along East Main street have taken up the matter of sewerage for that part of the town; the plan is to have a large trunk sewer run down East Main street to the river.

South Norwalk, Conn.—A petition has been presented asking for the extension of the sewer system in East Norwalk through Pleasant street; matter referred to the Sewer Committee.

Moultrie, Ga.—An election will be held to establish the legality of \$45,000 water and sewer bonds.

Danville, Ill.—Council has passed an ordinance appropriating \$8,400 for additional storm sewers.

Fort Wayne, Ind.—Plans have been ordered prepared for the construction of a sewer in the alley between Harrison and Webster, from Darrow to Rudisill.

Lewistown, Ill.—Consulting Engineer C. W. Brown, Jacksonville, is preparing plans for about two miles of vitrified pipe sewers.

Oak Park, Ill.—Bids will be received for the construction of a pipe sewer in certain portions of North Boulevard, together with the necessary manholes, catch basins and connections in the Village.—B. C. Brandstadt, Secretary, Board of Local Improvements.

Richmond, Ind.—No bids have been received by the Board of Public Service for the 70-foot extension of the sewer emptying into the river off South Fifth street.

Argentine, Kan.—The city contemplates the construction of three miles of vitrified

lateral sewers.—E. Z. McCullough, City Clerk.

Versailles, Ky.—Water and sewer bonds in the amount of \$60,000 have been sold by the city.

Livermore Falls, Me.—Bids are being received for constructing a sewerage system for the town.—Address Town Clerk.

Beverly, Mass.—City Engineer Harry Whitney has started surveys for the new Fourth Ward sewer.

Boston, Mass.—Council has passed \$655,000 loan order for a separate sewerage drainage.—George A. Hubbard, Mayor; William Jackson, City Engineer.

Hudson, Mass.—At a town meeting it was voted to appropriate \$1,000 for the construction of extensions to the present sewer system.

Lowell, Mass.—The Committee on Sewers has received a petition from Harry E. Gill for the extension of a sewer in Pine street; petitions also received for extension of sewer in Pawtucket street and for a sewer in Lawrence street.

Malden, Mass.—A hearing was given by the Street and Water Commission on the proposed sewer in Auburn court.

Winchendon, Mass.—Dr. Frederick W. Russell is Chairman of the Board of Health, which is in favor of the construction of a new sewage disposal plant.

Worcester, Mass.—The House of Representatives, at Boston, has taken up the bill for turning the sewage from the Worcester Insane Hospital into the Worcester sewerage system.

Boyne City, Mich.—Bonds, \$20,000, have been voted for sewer system.

Iron River, Mich.—Plans and specifications are being prepared by W. B. Patton, of the Duluth Engineering Company, Duluth, Minn., for the construction of a sewerage system at \$35,000.

Trenton, Mich.—Trustee Rieger wants the village to bond for \$10,000 for the construction of a sewer system.

Minneapolis, Minn.—A system of sewerage will be asked for the Seven Oaks district.

St. Paul, Minn.—City Engineer L. W. Rundlett has plans under way for the construction of the Portland Aldine Park sewer system.

Sauk Center, Minn.—Sewer District No. 5 has been ordered established.

Two Harbors, Minn.—Council has adopted a resolution authorizing the construction of lateral sewers on Second and Third avenues in the East addition.

Willmar, Minn.—A 6-inch sewer is to be laid, beginning at Russell avenue and running north.

Excelsior Springs, Mo.—Henry Ettenson has prepared a proposition shortly to be submitted to the Council for the construction of a sewer from Saratoga Springs addition to the outlet of the other sewers in Fishing River.

St. Joseph, Mo.—Council and Board of Public Works are considering ordinance introduced by Councilman Clark for a bond issue of \$316,000 for sewer purposes.

Dillon, Mont.—A sewer will be ordered constructed along the alley between Pacific and Atlantic avenues.

Carlstadt, N. J.—Preliminary steps were taken at recent meeting of Borough Council for the construction of a sewer system; an election will be held June 16 to vote on the matter.

New Brunswick, N. J.—Council has passed an ordinance providing for the construction of a public sewer in Sandford street, and also to relay and construct a public sewer in Delevan street, between Codwise and Railroad road avenues.

Trenton, N. J.—The City Engineer is preparing plans and specifications for sewers Nos. 402, in Olden avenue, Gladstone street and Farragut avenue; 407, in Woodland street, and 409 in Pennington avenue, Prospect and Short streets; bids for the work will be received shortly.

Cuidad Juarez, N. M.—Plans are being considered for the construction of a sewer system for the city.

Brooklyn, N. Y.—Consulting Engineer Creuzbar recommends that work be started at once on the newly approved sewer drainage plant for the East New York and Brownsville districts.

Clinton, N. Y.—Consulting Engineers Lederle & Provost, 39 and 41 West Thirty-eighth street, New York City, are preparing plans for a private sewage disposal plant, at Clinton, for Elihu Root.

Elmhurst, N. Y.—The Board of Public Improvements is considering a petition for the construction of a sewer on Cook avenue, from Broadway to Chicago avenue, and on Union avenue, from Union to Main.

Fulton, N. Y.—Mr. Horton, representing the engineering staff of the State Department, will, with City Engineer Breed, shortly go over the ground and prepare designs for a disposal plant.

Herkimer, N. Y.—The Board of Village Trustees has voted to construct storm sew-

ers from the intersection of Mohawk street and Smith street to hydraulic canal.

Jamestown, N. Y.—An expenditure of \$42,000 is recommended for the extension of sewers.

Mount Morris, N. Y.—The matter of installing a complete sewer system for the town is being considered.

Sloan, N. Y.—The town will shortly hold a special election to vote on issuing \$50,000 bonds for sewer purposes.

Pleasantville, N. Y.—Consulting Engineers Lederle & Provost, New York City, are preparing plans for sewage disposal, at Pleasantville.

Cincinnati, O.—Plans have been prepared for the construction of a sewer in Dover street, from McMillan street to Morgan street.

Cleveland, O.—Council recently passed a resolution for the construction of sewers in a number of streets, including Bessemer avenue, Barberton avenue, Marshall avenue, West Sixty-first street, Dennison avenue, West Fifty-sixth street and Hampden avenue.—Peter Witt, City Clerk.

Dayton, O.—Bids will be received June 8 for the purchase of the following 5 per cent. city bonds: \$11,000 sewer bonds, \$170,000 bridge bonds, \$89,000 storm water sewer bonds.—Edward Phillips, City Auditor.

Citizens of the Eighth and Ninth Wards have requested Council to take immediate action to improve the condition of the sanitary sewerage system in that section.

Hamilton, O.—Council has passed a resolution for construction of sewer in G street, from Ross avenue to Arch street, and in Millville avenue from Progress avenue to E street, and in East High street, from Tenth street to the Miami and Erie canal.

Sandusky, O.—The ordinance to issue \$33,000 bonds for the proposed new sewer system in the South Side has passed Council.

Wellsville, O.—Council has authorized a large extension of the sewer system of the city, for which it will be necessary to issue bonds, and Solicitor MacDonald is preparing an ordinance for the bond issue. Some of the work that will be done is urgent, and much damage to property may result if it is not soon completed. The sewers authorized are the following: Sewer at Third and Lisbon street, estimated cost, \$300; Aten run sewer at Twelfth street, \$478; Buckeye avenue, near Vulcan brick works, \$123.40; Eighteenth street, from Commerce to Chester, \$1,580.50; storm sewer at head of Fifteenth st., \$220; Buckeye ave. sanitary sewer between Third and Fifth streets, \$1,393.20; Chester avenue, Fifteenth to Seventeenth streets, \$563.75; Spring Garden avenue and Lisbon street, \$450; extension of McQueen's run sewer, \$2,500; the County Commissioners have agreed to join in the work of extending the latter sewer, and the cost to the county will be about \$3,500. The proposition to build at a cost of \$2,435 a sewer on the lands of the Vulcan brick works was rejected.

Youngstown, O.—Council has passed a resolution for construction of sewer in Mt. Pleasant street, from Glenwood avenue to west line of city lot No. 6,350, also for a sewer in an alley north of Edgewood street, between Center street and Dry Run.—H. C. Higgins, President of Council.

Durant, Okla.—An extension of the sewer system of the town is now proposed.

California, Pa.—The Borough Council will push the work of seweraging the borough as rapidly as possible.

Charleroi, Pa.—Council has passed a resolution for paving Lincoln avenue extension from the new road at the borough line to a point 499 feet from Second street. The Engineer was instructed to draw up plans and specifications.—Address Burgess Hott.

Greensburg, Pa.—Sewers are to be constructed on Jack, George and Franklin streets in the Seventh Ward.

Hazleton, Pa.—The West Hazleton Council is planning for a sewer system for Green Ridge and has authorized H. C. Moore to prepare a map and other details.

Johnstown, Pa.—The Board of Health will request Council to take steps to extend the sewer draining the properties in the neighborhood of Vaughn street.

Lansdowne, Pa.—The matter of constructing a sewer system for the borough will probably be taken up at an early date.

Meadville, Pa.—Rudolph Hering and Geo. W. Fuller, 170 Broadway, New York City, have been appointed Consulting Engineers by Council to make a study of sewage of the city and its delivery to disposal works and to report on the best methods for its purification; the population of the city is \$15,000.

Norristown, Pa.—Arrangements are being made for the establishment of a new sewage disposal plant as soon as possible.—Address Town Council.

Rochester, Pa.—The Town Council has passed an ordinance for the construction of a sewer along Clay street, from Harmony

road to Brighton avenue.—E. Bentel, President of Borough Council.

Redfield, S. D.—The city will expend \$18,000 for improving the sewer system.

Knoxville, Tenn.—As soon as the special committee appointed to secure the right of way for the extension of the First creek sewer has secured the necessary property bids will be advertised for the work; the sewer will drain that section north of Wells avenue.

Memphis, Tenn.—The recommendations of the City Engineer that a new drain be given the citizens of the Thirteenth Ward in the vicinity of McLemore avenue and Preston and La Rose streets, to relieve unsanitary conditions, was concurred in by council. A petition from the Magnolia Terrace subdivision asking that the city grant a water connection at a probable outlay of \$1,680, caused much argument and ended in a compromise. The company opening up the subdivision contemplates laying some 1,700 feet of sewers and providing a water supply. Council has decided to give the connection when the company has turned on its water supply.

Mexia, Tex.—Preparations are being made for sewerage system to be installed by Captain Cooke of Kansas City and associates.

San Antonio, Tex.—Prospect Hill citizens are agitating the matter of securing a sewer system.

Rutland, Vt.—The Board of Health has recommended the immediate need of a new sewage disposal plant at West Rutland.

Norfolk, Va.—City Engineer Brooke has been directed to construct sewer on Seventh street, Berkley, running from Berkley avenue to the new Rest House in Magnolia Cemetery.

Portsmouth, Va.—City contemplates construction of sewers in Fifth Ward and additions to present sewerage pumping station.—J. Davis Reed, Mayor.

Roanoke, Va.—The city is considering issuing \$100,000 bonds for sewer purposes.

Black River Falls, Wis.—Plans are being made for the construction of a sewer on Main street.

Washburn, Wis.—A sewer to cost \$350 has been ordered constructed on Pine street, from Washington to Fifth avenue.

Toronto, Ont.—The erection of a new filtration plant, sewage disposal works, etc., to cost about \$4,000,000, is being considered by Council.

WATER SUPPLY

Auburn, Ala.—The Board of Trustees of the Alabama Polytechnic Institute has authorized the construction of a system of water works for the institution. The source of supply is Binford's Spring, about two miles from the college, and there will be required about 200 feet of 8-inch pipe, 22,000 feet 6-inch pipe, 1,100 feet 4-inch pipe, an electrically-driven centrifugal pump, a 75,000-gallon elevated tank and the necessary valves and fire hydrants.

Clarendon, Ark.—Council has directed estimates to be prepared for proposed water system.—Address Mayor.

Lawndale, Cal.—The Board of Supervisors at Los Angeles is reported to have passed an ordinance granting a franchise to the Lawndale Water Company to construct and maintain a water system.

San Francisco, Cal.—Bonds, \$5,200,000, have been voted overwhelmingly for auxiliary water system for fire protection.—Marsden Manson, City Engineer.

The Federal Government has granted Lake Elanor and the Hatch-Hetchy basin in Yosemite Park to the city for reservoir sites in connection with its proposed new water system.

Yuba, Cal.—The Town Trustees are preparing to issue bonds for the construction of water system.

Hartford, Conn.—Surveys are being made in Barkhamsted and New Hartford for a large reservoir which is to be constructed by Hartford parties, the purpose being to increase the water supply of this city.

Ashton, Ida.—Bids will be received May 29 for the purchase of \$7,500 6 per cent. water works bonds.—F. X. Delenty, Village Clerk.

Batavia, Ill.—The Harris Trust and Savings Bank of Chicago has purchased \$26,100 4½ per cent. Batavia refunding and water extension bonds at a premium of \$175.

Spencer, Ind.—The Reliance Engineering Company, 18 East Fourth street, Cincinnati, O., has been retained to prepare plans for the construction of a water works system and electric light plant, the water works to be a deep well system.

Ames, Ia.—Bonds, \$15,000, have been voted to install a water system.

Creston, Ia.—The Creston Water Works Company contemplates repairs and improvements to its system at a cost of \$45,000.

Winterset, Ia.—Engineer W. K. Palmer of Kansas City, Mo., had prepared plans for

proposed water system; estimated cost, \$56,000.—Address Clerk, Board of Public Works.

Great Bend, Kan.—Estimates have been prepared for the construction of water works to cost \$60,000.

Hutchinson, Kan.—Council has passed an ordinance for the extension of 6-inch water mains in different parts of the town.

Kirwin, Kan.—Council has directed estimates to be prepared for water system to cost \$20,000; a bond election will be held June 2.

Baltimore, Md.—The Water Board has approved specifications for the construction of a high service reservoir near Forest Park.

Takoma Park, Md.—The Water and Sewer Committee was directed to submit a report to Council relative to the construction of a new filtration plant and the installation of water meters in the park.—W. G. Platt, Mayor; Geo. G. Davis, Town Clerk.

Chicopee, Mass.—The Board of Aldermen rejected Alderman Buckley's order to ask the Legislature for authority to appropriate \$27,000 for a water system to Fair View.

Woburn, Mass.—Town Council is considering the matter of securing additional water supply.

Grand Rapids, Mich.—Believing that if one unit of a 20 unit mechanical filtration plant was installed at the water works pumping station at a probable cost of \$1,966, the other 19 units would soon be constructed, Charles H. Leonard sent communication to the board, in which were embodied such recommendations. The matter was referred to the new Water Commission.

Ada, Minn.—The Village Council has received a petition asking for the construction of water mains one block west and 650 feet south of the Catholic Church.

Belleplaine, Minn.—It is probable that the water mains on Main street will be extended.

Buhl, Minn.—Engineer Oscar Claussen of St. Paul has prepared estimates for improving the light and water plant.—Address Clerk, Water Board.

Janesville, Minn.—Water mains have been ordered constructed along Main street, extending to the schoolhouse.

Mankato, Minn.—A movement has been started for the construction of a water works system in North Mankato.

Minneota, Minn.—Council has received a petition for the construction of a water main at a point on the north line of Section 36, Township 113, R. 43, and running along Lyon street to Jackson street.

New Ulm, Minn.—Water mains are to be laid on German street, from Fourth street to Seventh street.

Glendive, Mont.—Plans are being made for putting in a few water mains.

Harlowton, Mont.—Council is arranging to install a light and water plant.

Helena, Mont.—The citizens have voted to issue \$600,000 of bonds for the construction of water works.—Charles W. Helmick, City Engineer.

Campton Village, N. H.—Surveys have been made and plans are now being prepared by Engineer A. W. Dudley, Manchester, for a gravity water system for Campton Village; contract will probably be let about June 1.—Moody Dole, Chairman Water Board.

Arlington, N. J.—North Arlington Council is considering the matter of installing a water system.

Cape May, N. J.—The City Council has passed an ordinance providing for the issue of \$150,000 of bonds for the extension of the water and sewer systems.

Perth Amboy, N. J.—Mayor Bollscheuer has returned the ordinance providing for the issue of \$100,000 worth of water works improvements unapproved. The bond issue is, according to the Water Board, necessary to lay a new main under the Raritan River; to install a duplicate Worthington pump at Runyon; to lay various street mains and to make other necessary improvements. At a recent meeting of the Water Board the ordinance was passed on its final reading and referred to the Mayor and Board of Aldermen for approval.

Flushing, N. Y.—Officials of the Water Department of Queens are busily engaged in revising plans for the projected extension of water mains through the Flushing section as far as Bayside.

Geneva, N. Y.—Council has a resolution for the enlargement of the water system in the west and northwest parts of the town.

Roslyn, N. Y.—The matter of securing a water supply for the town was discussed at a recent meeting of the Board of Trade.

Hilton, N. D.—The Village Council contemplates the construction of a system of water mains to the outlying residence section of the city.

Bryan, O.—Seasongood & Mayor of Cincinnati, O., have purchased \$10,000 electric light and water bonds at \$10,728 and accrued interest.

Cincinnati, O.—The Water Works Commissioners will petition Council for authority to issue \$500,000 additional water works bonds at 4 per cent., to run twenty years.

East Liverpool, O.—The City Solicitor has been instructed to prepare a resolution authorizing the Directors of Public Service to advertise for bids for the extension of water mains on Island, Michigan, Myrtle and a portion of Harvey avenue in the East End; the estimates have already been prepared, and the improvement will be made as soon as the legal formalities have been complied with.

Hamilton, O.—The matter of extending the water mains to the territory recently annexed to the city is being considered.

Lorain, O.—The Service Board has asked Council for an appropriation of \$60,000 to extend the present intake of the water system.

Guthrie, Okla.—The city has accepted the plans prepared by the W. K. Palmer Company, Consulting Engineers, O. E. Wheelock, Business Manager, 717 Dwight Building, Kansas City, Mo., for the installation of a 2,000,000-gallon filtering plant.

Stillwater, Okla.—Bonds, \$33,000, for the extension of the water system are to be sold.

Weatherford, Okla.—A special election will shortly be held to vote on issue of bonds for the extension of the water works.

Harrisburg, Pa.—Plans are being prepared by the George S. Baton Company, Keystone Bank Building, Pittsburgh, Pa., for a mechanical filtration plant for the Harrisburg Water Company, including three pumps, three or four steel tanks, lined with concrete and reinforced concrete filter beds; estimated cost, \$100,000.

Lenox, Pa.—Select Council, in special meeting, passed finally the ordinance calling for a special election on the new pipe line loan proposition.—George W. Tringle, President of Water Board.

New Castle, Pa.—The water company, through its representative, Don H. Ambrose has notified the Fire Committee of Councils the company would immediately begin work upon a standpipe or else install an extra pump in an effort to give the residents of the Highland district and the Sixth Ward the required pressure for fire protection.

Bennettsville, S. C.—The Water Works and Sewerage Commission has decided to accept the best offer for the \$35,000 water works bonds and to install water works at once; it was also decided that the selling of the sewerage bonds would be deferred for a time. A year ago a Sewerage Commission and a Board of Public Works were chosen and the people also decided that they wanted water works and sewerage and voted for the issuance of \$35,000 bonds for water works and \$25,000 bonds for sewerage and \$10,000 for street improvements. The Board of Public Works is: H. L. McColl, Chairman; Jacob Isaacson and E. L. Hamilton. The Sewerage Commission is composed of T. E. McCall, Chairman; P. A. McKellar, F. G. Hollis, Dr. J. F. Kinney and C. S. Chaffin. Two boards have been working in conjunction, T. E. McCall being Chairman of the joint board. Mr. Minshall, a skilled engineer, has prepared plans and specifications.—P. L. Breedon, Mayor.

Lancaster, S. C.—The city has voted \$30,000 of bonds for the construction of water works.

Flandreau, S. D.—The matter of extending the water mains to the cemetery is now being considered.

Houston, Tex.—One mile of 8-inch water pipe will be laid at once and the municipal water plan service will be extended over that much territory.

Wichita Falls, Tex.—The Wichita Falls Water Company is planning extensive improvements; meters will be installed.—Henry Sayles, President.

Norfolk, Va.—Mayor J. G. Reddick has signed ordinance authorizing appropriation of \$750 for drafting a map of the city water mains and sewers, showing in detail the water system of the city; also resolution appropriating \$891.06 for extension of water mains along Omohundro and Llewellyn avenues, on petition of property owners.

Chattaroy, Wash.—The Council has granted a franchise to the Chattaroy Water Company to construct and operate a water plant.

Harrington, Wash.—Plans are being prepared for the construction of a water works plant here.

Mount Vernon, Wash.—John Meehan, of Mount Vernon, is preparing plans for the construction of water works; estimated cost, \$40,000.—J. S. Bowen, City Clerk.

Okanogan, Wash.—A water system will be installed this summer; surveys are now being made.

Wilson Creek, Wash.—Bonds, \$12,000, have been authorized for the construction of water system.

Keyser, W. Va.—Council proposes to improve water system.—R. A. Welch, Mayor.
Bruce, Wis.—Oscar Claussen, Engineer of St. Paul, is preparing plans for the electric light and water plant.—Address Village Recorder.

Cashton, Wis.—A light and water station will be erected at a cost of \$15,000.—Address Village Clerk.

Chippewa Falls, Wis.—A petition has been received asking for the extension of water mains to Cliff street and south on Cliff street to Bryant street.

East Troy, Wis.—Council is arranging to secure water supply.—Address T. W. O'Connor.

Wausau, Wis.—Council has directed the Knox Engineering Company, Fisher Building, Chicago, Ill., to prepare plans for water system; estimated cost, \$75,000.—Address Mayor.

West Allis, Wis.—Frederick Schneider, City Engineer, has prepared plans for extending the water mains in Seventy-third avenue, from Elm street to Summit avenue; in Fifty-sixth avenue, from National avenue to Burnham street, and in Fifty-first avenue, from Burnham street to Beloit road.

London, Ont.—Taxpayers will be asked to vote on a proposition to improve the city's water works system at a cost of \$60,000.

Taber, Alta. Can.—Town Council has decided to at once install a water works system.

LIGHTING AND ELECTRICITY

Gadsden, Ala.—The Tri-City Gas Company is to lay 16 miles of gas mains this summer.—H. C. Higgins, Neenah, Wis., President.

Redlands, Cal.—The Holton Power Company, a Redlands corporation operating in the Imperial Valley, has planned to spend several thousand dollars rebuilding its system during this summer; metal insulator pins will replace wooden ones all along the line, and radical changes are proposed for the power plant, more power being developed from the water of the Alamo River; a new 1,000-horsepower turbine generator will be installed; while the plant is being improved the power for the valley will be secured from the steam auxiliary plant at El Centro.

San Francisco, Cal.—The United Railroads of San Francisco has let a contract to the General Electric Company, Schenectady, N. Y., for a Curtis steam turbine direct connected to a 5,000-kw. General Electric 3-phase, 13,200-volt generator, to be installed in the North Beach power-house. It is stated that an increase in the boiler plant will be necessary.—E. D. Hibbs, General Superintendent.

Adrian, Ga.—The Adrian Power Works proposes to construct an electric light plant, water supply system, ice plant, etc., to cost altogether \$20,000.—W. W. Strickland, President and Manager.

Ludowici, Ga.—Council proposes to establish a municipal lighting plant.

Macon, Ga.—The Flint River Power and Electric Company has applied to the Railroad Commission of Georgia for permission to issue \$10,000,000 of common stock, the money to be used in developing the power of the Flint River, near Albany; the application was referred to a committee composed of Judge George Hillyer and H. Warner Hill and reported favorably; J. J. Massie of this city and associates are stockholders in the new company.

Moline, Ill.—The Executive Committee of the Tri-City Railway and Light Company has decided that the gas plant of the company at the foot of Fourth street in Moline should be generally renovated and placed on a better operating basis this year.—J. F. Porter, President and Manager.

Lewiston, Ida.—Plans are being made by the North Coast Power Company for the construction of a power plant on the Clearwater River, near Lewiston; the plant will have a capacity of about 50,000 horsepower and will furnish energy to operate a system of interurban lines connecting Lewiston with Clarkston, Asotin, Anatone, Cloverland and Pomeroy; the proposed dam is to be located on the Clearwater River, near Porter's Island, about four miles above Lewiston; work has commenced on a temporary plant, which is to furnish power to use in the construction of the dam.—Frank McLean, Engineer-in-Charge.

Indianapolis, Ind.—The Citizens' Gas Company, which is to supply Indianapolis with 60-cent gas, has purchased a site for an artificial gas-making plant.—J. D. Forrest, Secretary, Citizens' Gas Company.

Spencer, Ind.—The Reliance Engineering Company, Fourth National Bank Building, Cincinnati, O., has charge of the construction of electric light plant and water works system; the cost of the plants is estimated at \$35,000; the lighting plant will have an output of 200-kw.; there will be 60 arc lamps of 1,200 c.p. and 4,000 16-c.p. incandescent lamps; bids will be received at once for

yearly contracts on meters, lamps, transformers, etc.

Lehigh, Ia.—H. V. Williams will install an electric light plant.

Frankfort, Ky.—Prof. Paul Anderson and L. K. Frankel of State University, will prepare and submit plans to Capitol Commission for power house and installation of plant to furnish electric lighting, heating, etc.; \$460,000 has been appropriated for completion and furnishing new Capitol.—Augustus E. Wilson, Governor.

Fullerton, Ky.—Fullerton Power and Light Company has been incorporated by Albert Smith, Frank Swearingen and others.

Clinton, La.—A committee has been appointed to obtain prices and estimates for an electric light and ice plant for this town.—I. L. Heyman is interested.

Marquette, Mich.—The Board of Light and Power Commissioners, Marquette, Mich., has authorized the preparation of plans and specifications for constructing a sub-station for the present electric system; it is probable the new building will be of cement construction.

Buhl, Minn.—Changes and improvements will be made to the electric light and water plant; Oscar Claussen, Engineer, St. Paul, has prepared estimates.—Address Village Recorder.

Ellsworth, Minn.—Fred M. Sadler has been granted a franchise for an electric light plant.

Hinckley, Minn.—Franchise has been granted to J. J. Coburn of Cloguet to establish an electric light plant from power secured from the Grindstone River.

Farmington, Mo.—A new municipal electric lighting plant is to be installed as soon as possible, to cost over \$23,000.—Thos. B. Carter, Engineer-in-Charge.

McCabe, Mo.—The Martin Power Company contemplates erection of power plant; will install water turbines, direct connected to three-phase 2,300-volt 60-cycle generators.—C. K. Martin, Westplains, Engineer and Architect.

Westplains, Mo.—The Martin Power Company has secured a fifty-year franchise to construct an electric and telephone system from Westplains to Ozark County.

Genoa, Neb.—The Village Council has employed John W. Early, Columbus, Neb., to prepare plans, etc., for the proposed municipal electric lighting system, to be installed at a cost of \$10,000.

Grand Fork, N. D.—A new gasoline lighting plant will probably be installed on the Chautauqua grounds before the next session begins; this plant will furnish light for the entire grounds and will be a great convenience for the residents and campers.—Address Secretary of Chautauqua Association.

Cleveland, O.—The contract for the 1,000-kw. unit for the South Brooklyn municipal lighting plant has been awarded to the Westinghouse Machine Company, Westinghouse Building, Pittsburgh, Pa., for \$34,725.

Lewisburg, O.—Harry McDowell is preparing preliminary plans for a new municipal electric lighting plant, to cost \$26,000.

Muskogee, Okla.—The Muskogee Gas and Electric Company will extend both its gas and electric light mains in Muskogee at once, and thousands of dollars will be spent by the company this summer in improvements.—Dennis Flynn, President.

Norristown, Pa.—W. G. Risdon, Superintendent of the municipal lighting plant states that the contemplated improvements to the system consists of placing wires underground; bids will be received in June.

Pittsburg, Pa.—John P. Brennan is preparing plans for a new one and two-story power house and lighting plant, to cost \$50,000, for the Department of Charities and Correction.

—Victor J. P. Shaw, Superintendent.

Stroudsburg, Pa.—The Stroudsburg and Water Gap Street Railway Company contemplates increasing its power-house equipment and will let contracts soon for a 250-h.p. slow-speed engine and a 100-h.p. boiler.—H. E. Sweeny, President.

Uniontown, Pa.—Councils have awarded the West Penn Electric Company, of Connellsville, the contract for furnishing 156 street arc lights at \$70 each a year, the contract to run until January 1, 1912; the next bid was that of the Welsbach Company, which was at the rate of \$25 a light per year, but this bid was for gas light and was rejected.

Chester, S. C.—The citizens have voted \$26,000 bonds for extending the electric light and water systems.—James Hamilton, City Engineer; P. B. Caldwell, Mayor.

Mitchell, S. D.—The electric light and gas plant of the Mitchell Gas Company was sold at a receiver's sale by order of the Federal Court, and was bid in by D. A. Mizener for the Mitchell Illuminating and Power Company for \$25,010; the new company has increased its capital to \$200,000 for the purpose of extending and increasing the operation of the plant; a new coal gas plant will be constructed.

Guthrie, Okla.—The Legislature has appropriated \$55,000 for the construction of a heat, light and ice plant for the Fort Supply asylum.—Address State Superintendent of Public Institutions, Guthrie.

Weatherford, Okla.—Council has directed estimates to be prepared for an electric light system.

Abbeville, S. C.—The city will purchase and improve the electric plant owned by the Abbeville Light and Power Company.—J. L. McMillan, Mayor.

Spartansburg, S. C.—The Electric Power and Manufacturing Company, which recently bought the Spartanburg Gas and Electric Company, will make large extensions to surrounding mill towns.—F. D. McEwen, Vice President and General Manager.

Austin, Tex.—The local Water and Light Commission has approved a proposition to rebuild the granite dam across the Colorado River at this point; the Commission requests the City Council to order a special election on a proposed bond issue of \$300,000; it is accurately estimated that it will cost \$300,000 to construct the dam and that the power house and machinery will cost \$120,000.—Address Secretary of the Light and Water Commission.

Roanoke, Va.—The Roanoke Water Power Company is completing plans to light the streets and public parks of the city, for which contract has been secured; about 250 arc lamps will be furnished for five years.—W. E. Thomas, City Clerk; W. B. Bates, City Engineer; R. C. Camp, General Manager.

Centralia, Wash.—A special election will be called June 2 for the purpose of voting on the issuance of bonds to the amount of \$45,000, to be used in purchasing an electric light plant; the city already owns its own wires and poles, but has been buying its power; the contract for power runs out in about a year.

Deer Park, Wash.—The County Commissioners have granted a franchise to George Nixon, of Spokane, for installation of a power plant on the Spokane River, near Deer Park, which will furnish electricity or lamps and motors in Deer Park, Chattooy and Milan; the proposed transmission line will be about 25 miles in length.

Milwaukee, Wis.—Bids will be received in July for installing a heating and power plant in the Auditorium building; estimated cost, \$10,000.

Port Arthur, Ont., Can.—Bids for building the extension of the Onion Lake dams were received as follows: Pease Bros., \$7,700; E. T. Ross & Dumont, \$7,004 (awarded contract); Seaman & Pennaman, \$8,002; Stewart & Hewitson, \$7,450; S. J. McCutcheon, \$7,300.

FIRE EQUIPMENT

San Francisco, Cal.—Committee in charge has allowed \$212,000 for new apparatus and repairs for the Fire Department.

Kersey, Col.—The "Booster Club" is planning the erection of a new hose house.

New Haven, Conn.—A new fire company has recently organized at Hamden Plains and plans are now being discussed for new fire apparatus to be purchased.

Washington, D. C.—Site on K street, near Third street, has been condemned for the erection of a new truck house for the Fire Department.—W. T. Belt, Chief Engineer.

Chicago, Ill.—Hart, Schaffner & Marx of Boston, Mass., will erect a twelve-story manufacturing building at Monroe and Franklin streets, in this city; the building will be equipped with sprinkling system and fire apparatus.

Logansport, Ind.—Fire Chief Livingston recommends the purchase of additional fire apparatus.

Mexico, Me.—Council proposes to improve the fire protection of the village.—Address Village Clerk.

Boston, Mass.—In an "emergency" loan bill passed by Council Mayor George A. Hibbard secured \$25,000 for a new fire boat.

Brockton, Mass.—Fire Committee is considering the purchase of a new fire engine.—Address Chief of Fire Department.

Haverhill, Mass.—Chief Engineer Gordon of the Fire Department is in favor of an entire new fire alarm system, to cost about \$8,000.

New Bedford, Mass.—The City Council Committee on Fire Department recently voted to purchase 1,000 feet of hose and to recommend that authority be given for the purchase of an automobile combination chemical, to cost not more than \$6,000.—Address Chief Dahill.

Oxford, Mass.—A new hose company has been organized.—Clinton A. Rich, Foreman.

Springfield, Mass.—A \$9,000 appropriation has been made for the purchase of two combination hose and chemical automobiles and for repairs on the Chestnut street engine house.

Grand Rapids, Mich.—Alderman Gus Oswald of the Fifth Ward will probably be successful in landing the new fire station for

the upper part of the Fifth Ward; sufficient funds are on hand for this purpose.

Brookston, Minn.—Council proposes to purchase fire apparatus.—Address Recorder.

Duluth, Minn.—The Fire Board has recommended the construction of an addition to fire house No. 3, to cost about \$2,500; the Lakeside and West End Departments are badly in need of appropriations, but it is not likely that definite action will be taken for some little time.—Address Mayor Haven.

Ely, Minn.—The Fire Department has petitioned Council for rubber coats.—Address Recorder.

Mankato, Minn.—The Fire Chief has petitioned for additional hose.

Minneapolis, Minn.—It is probable that plans by A. L. Dorr will be accepted by the Committee on Fire Department of Council for the new fire station it is proposed to erect at Sixth avenue and Third street.

Hampton Beach, N. H.—L. C. Ring is chief of new fire company organized, which has secured \$1,000 for purchasing fire apparatus.

Hoboken, N. J.—Chief Engineer Dunn of the Hoboken Fire Department, in his annual report to the Board of Commissioners, recommends the purchase of new engine truck and two combination chemical and hose wagons and erection of a new house for a hook and ladder company.

Buffalo, N. Y.—Alderman Fisher of the Seventeenth Ward states that recent fires show the need of additional fire fighting facilities in the Kensington and Central Park districts and is in favor of the erection of a new firehouse in the vicinity.

New York, N. Y.—The New York Board of Fire Underwriters has condemned the present fire alarm system; the present system cannot be repaired, but must be entirely replaced; a request for \$2,500,000 for this purpose is now pending before the Board of Estimate and Apportionment; the report also asks for more fire engine houses and apparatus on the East Side.—Address Commissioner Hayes, Fire Department.

Port Chester, N. Y.—Sites are now being investigated preparatory to the erection of new fire houses.—Address Chief Chas. E. Lounsbury, Hose Company.

Canton, O.—It has been recommended that \$78,000 bonds be issued for the erection of a new Central engine house and police station on site of present engine house and patrol house, and the Board of Public Safety is now considering the matter.

Dayton, O.—A new fire house and equipment for east side are needed as soon as possible; Mr. Wolfensbarger is in favor of the plan to issue \$30,000 bonds for this purpose.

The North Dayton Improvement Association recently held a meeting at Kiser Hall, when the question of better fire protection was discussed; site is to be secured soon as possible for new engine house.

Portland, Ore.—An ordinance was passed recently appropriating \$25,000 for new fire engines.—Address Mayor Lane or Chief of the Fire Department.

Boyertown, Pa.—Keystone Fire Company has purchased site for new fire engine house.

Harrisburg, Pa.—Council is considering contracts for new fire engine house to be erected here for the Shamrock Fire Engine Company; cost estimated at \$8,000.

New Hope, Pa.—The New Hope Fire Company has decided to erect a large and modern new firehouse, to be of brick construction and up to date in every detail.

Pittsburg, Pa.—Architects Kiehnle & Elliott are receiving estimates on new \$25,000 engine house to be built on Rebecca street, Nineteenth Ward; also for new fire engine house at Remington and Missouri avenues, to cost \$30,000; Mentel & Clark will receive bids for two-story addition to fire engine house on Eighth street, near Penn avenue.

Plymouth, Pa.—Plans have been completed and ground broken for new engine house for Fire Company No. 1, on Gaylord avenue.

Pottstown, Pa.—The Liberty Fire Company of Spring City has decided to erect new addition after plans by Architect J. V. Poley.

Central Falls, R. I.—Council has appropriated \$2,000 for a new combination hose and chemical wagon for the Kendall street fire station.

Greenville, Tenn.—The Brown Manufacturing Company will install automatic sprinkler system in factory.

Knoxville, Tenn.—C. E. Wheeler, manager of the Tennessee Inspection Bureau, recommends that the city provide five new pieces of fire fighting apparatus and the erection of one new station and improving of several others.—Address City Council or Chief of the Fire Department.

Beaumont, Tex.—W. C. Whitney has been awarded contract for the erection of three new fire stations, to be erected as soon as suitable sites can be secured; cost, \$14,600.

Seguin, Tex.—Plans have been accepted and work will probably soon be commenced

on new central fire station.—Address Chief Fire Department.

Temple, Tex.—The Fire Department is to be reorganized and improved.—Tom S. Wright, Fire Chief.

Salt Lake City, Utah.—The National Fire Protection Association recommends the purchase of additional fire apparatus.

Bellingham, Wash.—Plans have been completed for new fire hall at Maple and Indian streets.—William Cox, Architect.

Bridgeport, W. Va.—Members of the Fire Department recently held a meeting to discuss additional equipment for the Department.—Address Chief Martin.

Janesville, Wis.—The employees of the Janesville Machine Company have organized a fire company; equipment will be purchased.

PUBLIC BUILDINGS

San Francisco, Cal.—Bonds, \$5,000,000, have been voted for schoolhouses and lands; \$2,000,000 for hospitals and \$1,000,000 for Hall of Justice and County Jail.—Marsden Mansen, City Engineer.

New Haven, Conn.—An appropriation of \$82,000 has been granted for new school in the Welch district by the Finance Committee, and plans for new three-story, eighteen-room building are being prepared.

Rehoboth, Del.—The School Board has called for bids for the sale of school building bonds to the amount of \$5,000.

Helena, Ga.—The citizens have voted \$10,000 bonds for new high school.—Address Town Clerk.

Barry, Ill.—The School Board is receiving plans for a new two-story high school, to cost about \$40,000, and a new two-story graded school, to cost \$20,000.

Chicago, Ill.—Plans are being prepared for a new educational institution to be located near Rogers Park and Edgewater; cost, \$75,000.

W. A. Holabird is preparing plans for new City Hall, which is to be erected and to be completed by October 1, 1910.

Galesburg, Ill.—Judge Rice is at the head of a scheme to erect a new detention home for juvenile offenders.

La Salle, Ill.—John H. Barnes of Joliet, is preparing plans for a new school, to be modern and cost \$45,000.

Pana, Ill.—A high school is to be erected to be modern in every detail and cost about \$15,000.—Address the School Board.

Rock Island, Ill.—Council is considering additions and improvements to City Hall.

Adams, Ind.—Henry L. Duncan, Union Building, has plans for new two-story graded school here, to be brick and modern construction and cost about \$14,000.

Indianapolis, Ind.—City Council Building Committee, in meeting with Mayor Bookwalter, discussed the erection of an adequate City Hall building.

Newcastle, Ind.—The Board of Trustees of the State Village for Epileptics has plans and permit for another new building, to form part of Colony No. 2.—Dr. W. E. Van Nys, Superintendent.

Tocsin, Ind.—The Advisory Board of Jefferson Township has authorized Architect Houch to prepare plans for new school.

Keokuk, Ia.—At special school election it was voted to issue \$35,000 bonds for a new school.—Address Board of Education.

Muscatine, Ia.—The City Board of Health has decided to erect two new buildings on the city pest house property on Fullilair avenue; plans not yet decided on.

Plans are being prepared for a large and modern new jail, to cost about \$30,000.—Address Board of Supervisors.

El Dorado, Kan.—The erection of a new Court House for Butler County is an assured fact; the County Commissioners have purchased full block of ground, on which present building is located.

Salina, Kan.—Contracts are soon to be awarded for repairing and remodeling City Hall, in accordance with plans on file.—A. W. Godfrey, Clerk.

Biddeford, Me.—The School Board is considering the erection of a new school, to cost about \$40,000.

Waterville, Me.—The Board of Education has been discussing plans for proposed new high school.

Boston, Mass.—In an "emergency" loan bill passed by Councils, Mayor George A. Hibbard asked for \$364,500, of which the following is to be used for public buildings: Bathhouse, North End, \$20,000; school building, Parental School, West Roxbury, \$50,000; Hospital for Consumptives, \$25,000; Emergency Hospital, East Boston, equipment, \$13,000; Washington street, West Roxbury, \$25,000; City building, Adams and Arcadia street, addition, \$6,500.—Wm. Jackson, City Engineer.

Fall River, Mass.—Plans are about ready for bids for the proposed contagious hospital; the building will be of brick and stone

construction and will cost \$150,000.—L. G. Destremps & Son, Fall River, Architects.

Fitchburg, Mass.—Bill submitted by Mayor James H. McMahon to the Senate for an appropriation of \$75,000 for the erection of a new manual art school in connection with the State Normal School, has been passed, and new building will probably soon be erected.

Lynn, Mass.—Plans are now being received for a new police court building to be several stories high and modern construction.—Address Chief Clerk Parker.

Newburyport, Mass.—The question of adding to the Currier grammar school is being considered; \$22,000 will be used for this purpose.—Mr. Williard, Superintendent.

Northampton, Mass.—Plans are under way for the new building to be erected for city purposes.

North Reading, Mass.—The State Commission to build three new hospitals for consumptives has selected site for new buildings, etc.; will cost \$100,000.

Swampscott, Mass.—Plans are being prepared by Architect Charles V. Burgess of 15 Boynton street, city, for a new school at Phillips Beach, to be modern in every detail and cost about \$47,000.—S. P. Congdon, Thoas road, Chairman School Board.

Westboro, Mass.—A bill has been reported for the appropriation of over \$26,000 for improvements to hospital.

Woburn, Mass.—Miss Helen O. Sprague has offered site for a new hospital to be erected on Warren street; the matter is now being considered by the Mayor.

Big Rapids, Mich.—The question of securing suitable location for new pesthouse is now being considered.—Address Health Officer O'Hara.

Vicksburg, Mich.—The School Board has called a special meeting to vote on a new school, to cost about \$25,000.

Duluth, Minn.—Contracts will soon be awarded for new Court House, to cost about \$1,000,000.—D. H. Burnham & Co., Architects.

Hibbing, Minn.—Council has decided to erect a new brick and stone structure, two stories, to cost about \$20,000, to be used as a City Hall and police station.

International Falls, Minn.—Arrangements are well under way for a large and modern new Court House, to be up to date in every detail and cost about \$85,000.

Eupora, Miss.—The citizens have voted \$10,000 in bonds for school purposes.—Address Clerk of the School Board.

New Albany, Miss.—Plans by M. Dobson & Co., Montgomery, Ala., have been accepted for new Court House.

Cassville, Mo.—Barry County Court is now ready to receive bids for the construction of the new county jail.

Hannibal, Mo.—Mayor F. W. O'Brien and Council recently discussed the issuance of bonds for new City Hall at Fourth street and Broadway, to cost \$68,000.

Lockwood, Mo.—Architects Reed & Heckelively, Springfield, are preparing plans for two-story Town Hall and Odd Fellows' building, to cost \$6,000.

Palmyra, Mo.—Citizens voted \$75,000 bonds for the erection of a new infirmary to take the place of the county poorhouse.

St. Louis, Mo.—Plans for the erection of a large addition to the Asylum for the Insane, for which \$1,000,000 bonds were sold recently, have been approved by the Board of Public Improvements.—Milliken & Wray, 721 Olive street, Architects.

Butte, Mont.—The Silver Bow County Commissioners will at once advertise for bids for the purchase of \$750,000 Court House bonds.—Paul Ozonne, Clerk of County Board.

Missoula, Mont.—Bids are soon to be advertised for the new Court House after plans by A. J. Gibson, to be located on site of the old Court House; about \$50,000 is to be expended.

Lincoln, Neb.—The Board of County Commissioners is planning the establishment of a new hospital on the County Farm.

Omaha, Neb.—Proposition to construct a new temporary jail at a cost of \$15,000 at Eighteenth and Harney streets, preparatory to erecting new and larger building, is now being considered.

Dover, N. H.—A new city building, to cost about \$90,000, is to be erected, for which ground is to be broken next month.

Hoboken, N. J.—Chief of Police Hayes of Hoboken, in his annual report to the Police Commissioners, recommends the erection of a new police headquarters.

Orange, N. J.—Arrangements are well under way for a new City Hall.

Rahway, N. J.—The Board of Education has petitioned for an appropriation of \$100,000 for site and erection of new seventeen-room school.

Albany, N. Y.—Plans are being considered for the new prison to take the place of Sing Sing and to be erected on Bear Mountain, near Iona Island and Highland Lake; plans for new institution call for an expendi-

ture of \$2,000,000, and a commission is considering the matter.

Schenectady, N. Y.—Stoddart & Weatherly, Architects, 33 East Seventeenth street, New York City, have been selected architects for a new Court House; cost, \$600,000.

Utica, N. Y.—The citizens have voted in favor of \$250,000 bonds for new schools in East and West Utica.—Address the School Board.

Sanford, N. C.—Bids will be received June 8 for the purchase of \$40,000 5 per cent, 30-year Lee County Court House and jail bonds.—T. M. Cross, Clerk, Board of Commissioners.

Cleveland, O.—The County Commissioners will readvertise for the purchase of \$300,000 Court House bonds.—Address Commissioner Fischer.

Youngstown, O.—Caldwell & Drake of Bloomington, Ind., have charge of the new \$80,000 Court House.

King & Zenk, David Block, prepared plans for a new school on Bissell street for the Board of Education, to be brick and fireproof and contain ten rooms.

Lawton, Okla.—Contracts are soon to be awarded for new school in the Fifth Ward; cost, \$20,000.

Clearfield, Pa.—Citizens have voted to erect a suitable school and the district has voted \$45,000 for this purpose.—Address the School Board.

Kittanning, Pa.—Citizens have started a movement for a new high school, to be of modern construction and contain all improvements, and to cost about \$300,000.

New Castle, Pa.—W. G. Eckles has prepared plans for a new high school, to be brick and fireproof and modern construction.

Reading, Pa.—The Select Council has decided to hold special election June 28 for voting on \$50,000 for city for new City Hall, etc.

Philadelphia, Pa.—Plans are completed for a new addition to the Municipal Hospital at Second and Luzerne streets, to be 36x124 feet, and new isolation hospital, to be 59x33 feet.

Cope & Stewardson, 320 Walnut street, have prepared plans for large new building at the University of Pennsylvania, to cost \$90,000.

The Prospect Park Fire Company has awarded Fred Faber contract for construction work on new firehouse and Town Hall at Prospect Park, to cost about \$12,000.

Pittsburg, Pa.—Plans for the new high school, including all the drawings submitted in the original competition in 1906, have been placed on public exhibition at the Fifth avenue high school. By 301 to 134 voters of the Thirty-eighth Ward, Feltzhoover School Sub-District decided to increase the indebtedness \$100,000 for a new school building, equipment and furniture. It is to be erected in California street. The officers of the Thirty-eighth Ward sub-district board are John J. Waite, president; T. P. Hollis secretary, and John A. Jamison, treasurer.

Washington, Pa.—The Board of Education has purchased two parcels of real estate on which to erect a high school building. The ground measures 132x264 feet; the Board is now negotiating with architects for plans, and as soon as an acceptable set is secured work on the building will be started.

Bristol, R. I.—Plans are under way for issuing \$40,000 bonds for a new Town Hall.

Providence, R. I.—Competitive plans are invited for new 12-room school in the Third Ward.—Walter H. Small, Superintendent of Schools.

Cane Ridge, Tenn.—A site has been selected here by the Board of Education for the proposed new school.

Dyersburg, Tenn.—L. M. Weath & Co., Trust Building, Memphis, prepared plans for a new addition to school, and bids for construction work are now being received.

Jackson, Tenn.—An election will be held June 2 to vote on issue of \$25,000 City Hall bonds.

Pinewood, S. C.—Citizens recently voted \$12,000 bonds for a new school.

Canyon City, Tex.—The Attorney General has approved an issue of \$53,000 Randall County Court House bonds.—Address County Commissioner.

Dimmott, Tex.—The Attorney General has approved an issue of \$28,000 Castro County Court House bonds.

San Antonio, Tex.—The School Board will donate site for a new industrial and manual training school, for which \$40,000 has been donated by Mrs. Halff in memory of Sol Halff.

San Marcos, Tex.—An election will be held June 20 to decide the question of issuing \$28,000 bonds for the construction of Court House in Hays County.—Address County Auditor.

Alexandria, Va.—The city School Board has accepted the plans of Charles M. Robinson of Richmond for a new public school building to be erected for white girls, to take the place of Peabody building; the

structure will be of brick and concrete, will contain sixteen rooms and will be two stories high, with fireproof stairways; it will be erected on a lot on the north side of Prince street, between Patrick and Henry streets; the building and lot will cost about \$33,000.

Appomattox, Va.—A new school is soon to be erected by the city, the building to cost about \$10,000.—Address, Board of Education.

Richmond, Va.—Jackson Davis, Superintendent of Schools, has plans by Charles M. Robinson for a new school on New Market road, Varina.

Roanoke, Va.—City is considering the issuance of \$201,000 bonds for new City Hall.

Spokane, Wash.—Plans for the erection of new schools are being considered by the School Board.

Milwaukee, Wis.—Sites are being investigated for Court House, and one will be selected as soon as possible.—Address Supervisor Jeske.

Morgantown, Wis.—Elmer F. Jacobs has prepared plans for new four-story brick and stone hospital for the City Hospital Association, to cost \$30,000.

Racine, Wis.—Residents of the village of Union Grove have decided to erect a new lockup, hall and fire station, to take the place of the structure destroyed by fire some time ago.

Ponoka, Alta, Can.—Plans are being prepared at the Department of Public Works, Edmonton, for an insane asylum, to be erected at Ponoka, at a cost of \$200,000.—Hon. W. H. Cushing, Minister of Public Works, Edmonton.

Mexico City, Mex.—Manuel Bringas & Co. have approved plans for the construction of a building to cost approximately \$600,000; the plans were drawn by Dorner & Bacmeister, and work on the new building will begin during the summer; the building, which will be four stories in height, will cover all the ground on the north side of Second Independencia, from San Juan de Letran to Calle de Lopez; there will be entrances on Independencia and San Juan de Letran and Callejon de Lopez. The entire length is to be 92 meters, while the width will be approximately 15 meters; the lower stories of the new building will be occupied for mercantile purposes, and the upper stories will be viviendas, the whole including about 500 rooms.

ELECTRIC RAILWAYS

Opelika, Ala.—The Alabama Railway & Electric Company proposes to build this year from Lafayette to Eufaula, Ala., 80 miles, and southward from there to the Gulf coast. The officers are A. M. Buchanan, Opelika, Ala., President; Judson C. Chapman, General Counsel and Vice President, and John M. Shelly, Secretary and Treasurer, Atlanta; capital, \$200,000. Surveys have been completed and grading has been completed from Lafayette to Opelika. A contract will be let for grading between Opelika and Eufaula soon. Grades and curves will be light. Several short bridges and trestles will be required. Company plans to have at least 15 miles in operation this year. For further information address Judson C. Chapman, Attorney, 223 Century Building, Atlanta, Ga.

Holbrook, Ariz.—H. Lee Chilson, of Winslow, Ariz., has been granted a franchise to build an electric railway from Holbrook to Fort Apache.

East St. Louis, Ill.—The Wood River, East Alton and Bunker Hill Traction Company has been incorporated; principal office, East St. Louis; capital stock, \$150,000; it is proposed to construct and operate an electric railroad from Wood River, Madison County, to Gillespie, Macoupin County, paralleling the Cleveland, Cincinnati, Chicago and St. Louis Railroad; the incorporators and first Board of Directors are J. T. W. Rudesill, R. W. Smith and others.

Colfax, Ia.—James Donahue, of Davenport, who bought the Hotel Colfax property, a mile east of town, has secured the grant of a franchise to build an electric car line from his hotel to the city, and has also secured the right of way.

Ottawa, Kan.—R. C. Rawlins of Chanute has petitioned the Council for an electric line through the streets.

Frederick, Md.—Contracts will be let shortly by the Washington, Frederick & Gettysburg Railway Company for the extension of its line from Lewistown, Md., to a connection with the Monocacy Valley Railroad, about 3½ miles. There will be 12,000 cubic yards of excavation; 75 M feet B. M. trestling; and 100 cubic yards of fourth-class masonry.—D. Columbus Kemp, President and Purchasing Agent.

Louisiana, Mo.—No final plans have been made yet by the Louisiana Light, Power and Traction Company, which will build an electric line between Louisiana and Bowling Green, Pike County; it will be eleven miles long. Company expects to take up the matter more fully later; capital stock, \$200,000;

power house and repair shop will be located at Louisiana.—L. Turnbolt, President, and General Manager; F. E. Murray, Secretary.

New York, N. Y.—James W. Stevenson, Commissioner of Bridges, will sell at public auction to the highest bidder, on June 2, at 10:30 a. m., at the railroad yard, foot of Thirty-ninth street, Brooklyn, passenger coaches, truck cars, etc.

Xenia, O.—The Cincinnati, Wilmington & Xenia Traction Company has secured capital for building its line from Xenia to Wilmington and Blanchester, Ohio, 35 miles. Survey has not been made yet, nor has right-of-way been obtained.

Oklahoma City, Okla.—The Oklahoma Electric Railway Company is preparing to build an extension to the State Fair Grounds.—J. W. Shartell, Vice-President and Manager.

Pendleton, Ore.—Dr. H. W. Coe is organizing a company to build an electric line.

Fredericksburg, Tex.—The Texas Short Line will build ten iron bridges on proposed line from Comfort to Fredericksburg.—D. C. Earnest, General Manager, Dallas.

Drake's Branch, Va.—Wood Bouldin, Jr., and J. S. Easley, of South Boston, Va., have made investigations with a view of establishing an electric railway from Drake's Branch to some point on the Virginian Railway. If the railway is built the towns of Drake's Branch and Charlotte Court House will be lighted by electricity.

Norfolk, Va.—The Norfolk and Portsmouth Traction Company will make improvements and extensions of its tracks.—E. C. Hathaway, General Manager.

Janesville, Wis.—Surveys are being made for the proposed Janesville & Madison Electric Railway to run from Main and Milwaukee streets, Janesville, to Madison, via Edgerton, Stoughton, Lake Kegousa, Lake Waubesa and South Madison.—Joseph Ellis, Chief Engineer.

BRIDGES

Gadsden, Ala.—The directors of the Louisville Railway have decided to build a railroad bridge across the Coosa River.—W. H. Courtney, Chief Engineer of Louisville and Nashville Railway, Nashville, Tenn.

Redwood City, Cal.—The San Mateo County Supervisors have accepted plans for two concrete bridges prepared by Surveyor Neuman.—Address County Surveyor.

Wilmington, Del.—The Board of Park Commissioners have directed plans to be prepared for new bridge across the Brandywine Creek.—Address Treasurer Betts, Board of Park Commissioners.

Leesburg, Ga.—The Grand Jury that has just adjourned found that the County of Lee had in hand over \$12,000, and recommended that the county build at once two steel bridges, to cost \$6,000.—Address County Auditor.

Lewiston, Ill.—Council has condemned the old bridge near Judge Winter's residence as unsafe.

Westchester, Ind.—The Randolph County Council will be petitioned to appropriate money for the construction of a wide bridge across Salt Creek, at the south end of Main street, near Fountain Park Cemetery.—Address County Auditor.

Erie, Kan.—The Neosho County Board will receive bids at the June meeting for four county bridges; one of the new bridges is to replace the one in Big Creek Township, and will be 142 feet long; two of the other creek bridges will be built south of St. Paul, one 60 feet long and the other 30 feet long.—O. M. Johnson, Neosho County Clerk.

Lawrence, Kan.—The County Commissioners have chosen the sites for two new bridges in Eudora township, both to be built this year.—Address Douglas County Surveyor.

Boston, Mass.—Council has passed Mayor Hibbard's "emergency" loan bill, which calls for a total of \$364,500, of which amount \$205,000 is for the reconstruction of the Chelsea street, Huntington avenue, Massachusetts avenue and Congress street bridges.—Wm. Jackson, City Engineer.

Stockbridge, Mass.—The Board of Selectmen is having plans prepared for the construction of a bridge over the causeway at Lake Mackenac.

Crookston, Minn.—The County Commissioners have appointed Commissioners Rindal and Clements a committee of two to consult with the Town Board of Garfield with reference to a bridge over the Sandhill River, near Fertile; the town has agreed to pay one-half the cost and the county one-half; the combined committee will determine the plans.—Address Auditor of Polk County.

Duluth, Minn.—It is estimated that an expenditure of \$40,000 will be entirely inadequate for repairing bridges, and those in the most dangerous condition should be replaced by steel or concrete structures.—Address Mayor Haven.

St. Paul, Minn.—City Engineer F. W. Rundlett has prepared a preliminary sketch for a steel bridge over the Earl street crossing of the Northern Pacific and Omaha

tracks; the bridge with approach will be 1,100 feet long and 22 feet above the tracks; the approaches will be made of concrete; cost \$25,000 or \$30,000.

Gering, Neb.—The citizens of Scott County will vote on the question of issuing bonds for building county bridge.—Address County Auditor.

Oswego, N. Y.—A bridge is to be erected at Utica st.—Geo. S. Tibbets, City Engineer.

Syracuse, N. Y.—Mayor Alan C. Forbes has affixed his signature to the ordinance granting permission to the Syracuse Chilled Plow Company to build an enclosed overhead steel bridge across Marcellus street.

Grand Forks, N. D.—The county bridge in Walls township has been destroyed by fire; loss, \$1,200.—County Surveyor Lawson.

Belpre, O.—The Parkersburg Bridge Company has been organized to construct a bridge to connect Parkersburg, W. Va., and Belpre; estimated cost, \$400,000.

Cleveland, O.—The Cuyahoga County Commissioners have requested A. B. Lea to prepare plans upon which to base advertisements for bids for the work on the new Rocky River bridge on Detroit avenue, Rocky River; the estimate of cost already submitted is \$206,000.—A. B. Lea, County Surveyor.

Dayton, O.—Council has directed plans to be prepared for a \$170,000 concrete bridge to Dayton View.—Address City Engineer.

Massillon, O.—The Stark County Commissioners have decided to expend several thousand dollars in improving the West Main street bridge at Massillon.—Address Stark County Auditor, Canton.

Representatives of the Massillon Board of Trade have petitioned the County Commissioners at Canton for a new bridge at West Tremont street over the Tuscarawas River. The Commissioners said that they would make no immediate decision in the matter. The Massillon business men present were President I. M. Taggart, Secretary H. C. Brown, C. A. Gates, Harry F. Rider, C. O. Heggem, Bernard Bell, E. C. Merwin and F. W. Arnold.

Zanesville, O.—The County Engineer is preparing plans for the repair of the Dresden suspension bridge over the Muskingum River.

McAlester, Okla.—Pittsburg County will expend \$100,000 in building bridges.—Joseph Tannehill, Pittsburg County Commissioner.

Charleroi, Pa.—The County Commissioners have sold to N. W. Harrison, of New York and Philadelphia, the \$100,000 bond issue proposed for the construction of the Doneora-Webster bridge. The premium for the issue is \$1,400; the bonds bear interest at 4½ per cent.

Yankton, S. D.—The City Engineer has been ordered to prepare plans for the construction of a concrete bridge at Douglas avenue.

Norfolk, Va.—Council has appropriated \$8,000 for the construction of a concrete bridge on Lovitt avenue, extended, through Jackson Park.

Seattle, Wash.—R. H. Thomson, City Engineer, has estimated the cost of the construction of a pile bridge here at \$5,700.

Parkersburg, W. Va.—The Wood County Court is planning to construct a new bridge across Pond Creek.—Address Clerk of Wood County Court.

Parkersburg, W. Va.—The Parkersburg Bridge Company, James A. Newell, East Liverpool, O., President, has had plans prepared by E. K. Morris, Pittsburgh, Pa., for the construction of a bridge across the Ohio River, between Parkersburg and Belpre, Ohio; estimated cost, \$400,000.

Madison, Wis.—The City Engineer reported a plan for a reinforced concrete viaduct over the Illinois Central Railway Company tracks on Spooner street in West Lawn, and the same was referred to the Committee on Streets.

Monroe, Wis.—Arrangements are being made to construct new bridges in Spring Grove.—Bert McNair, Supervisor.

Shedo, Sask., Can.—The Saskatchewan Government will construct four steel bridges in this district this summer.—F. J. Robinson, Deputy Minister Public Works, Regina, Sask.

MISCELLANEOUS

Fort Smith, Ark.—Mayor Bourland is in favor of expending \$86,000 for a new park; a \$100,000 appropriation for a new City Hall is also being discussed.

Berkeley, Cal.—The city is to appropriate \$65,000 for constructing a new garbage incinerating plant.

San Francisco, Cal.—Bonds, \$1,000,000, have been voted for a garbage disposal plant.—Marsden Manson, City Engineer.

Hartford, Conn.—The Police Commission is in favor of new specifications and advertising of bids for new ambulance.

West Tampa, Fla.—The citizens have voted \$180,000 bonds for public improvements.

Columbus, Ga.—Plans are under way for purchasing 27 acres of land at North Highlands for new public park.

Boise, Ida.—A site just off Warm Springs avenue has been selected for the proposed new park.

Vincennes, Ind.—Board of Public Works recently discussed plans for the erection of a large and modern new garbage reduction plant.

Dubuque, Ia.—About \$20,000 is needed for improving Eagle Point Bluff, and arrangements will be made for converting it into a park; Judge Shiras is at the head of a committee in charge.

Highland, Kan.—Arrangements are being made for a new public park.

Baltimore, Md.—The sum of \$25,000 has been appropriated for new park at Kenwood avenue.—Address President Latrobe of the Park Board.

Cambridge, Mass.—The Finance Committee has reported an order favoring the appropriation of \$25,000 for Park Department construction and the recommendation was accepted, the order being adopted by counsel.

Lawrence, Mass.—The matter of providing a garbage disposal plant for the city is now being considered by the Board of Health.

Yazoo City, Miss.—The question of constructing a garbage crematory is reported under consideration.—Edw. Luke, Mayor.

St. Louis, Mo.—A site north of the city is to be secured for the erection of a new garbage reduction plant; Lawrence B. Pierce is President of the Standard Reduction and Chemical Company, which has been awarded contract for construction work.

Webb City, Mo.—A park, to be located southwest of the city, is being discussed.—Address President Hartison of the Commercial Club.

Kearney, Neb.—Plans are being discussed for a grand city park.

Omaha, Neb.—Plans are under way for a new public park near Prospect Hill.

Sealed proposals will be received May 28 for \$50,000 4½ per cent, 20-year intersection bonds; \$50,000 4½ per cent, 20-year park bonds; \$45,000 4½ per cent, 6¾-year (average) special assessment bonds.—Frank A. Furay, City Treasurer.

Binghamton, N. Y.—The question of erecting a new garbage crematory is being discussed; Health Officer D. S. Burr is in favor of the proposition; cost, about \$20,000.

Glens Falls, N. Y.—Land between Glens Falls and Lake George is to be transformed into a public park; Dr. Sherman Williams is at the head of the movement.

Rochester, N. Y.—Secretary Pifer, of the Board of Contract and Supply has been directed to advertise for 22,000 feet of eight-conductor armored cable, five Gamewell fire alarm boxes, sweeping, cleaning, flushing and sprinkling of a number of streets, cement walks in Lang street, Culver road and Gold street, Locust street brick pavement, Federal, Meng and Melville street crosswalks and laying 36-inch water mains in Culver road, between the Erie canal and Monroe avenue.—E. A. Fisher, City Engineer.

Syracuse, N. Y.—City officials are considering the erection of a large and modern garbage crematory.—Henry C. Allen, City Engineer.

Cincinnati, O.—Plans are being discussed for garbage disposal, and a contract for about \$165,000 will soon be entered into.

Columbus, O.—New bids are to be invited for the erection of a new garbage disposal plant.—Address Director D. J. Fisher of the Board in charge.

Springfield, O.—At a recent meeting of the Council the proposed park system was discussed.

Youngstown, O.—The Board of Health is considering the improvement and enlargement of the garbage crematory.

Allentown, Pa.—A site has been chosen on Bull Creek road for the erection of a new garbage disposal plant; the Fire and Property Committee has been authorized to purchase property.

Reading, Pa.—Address City Engineer Elmer H. Beard for further information regarding the erection of new garbage disposal plant here.

Austin, Tex.—Work is to be commenced some time in June on a new garbage disposal plant.

Norfolk, Va.—Mayor J. G. Riddick has approved ordinances from the Board of Control for appropriation of \$500 for improvements in Elmwood and Cedar Grove Cemeteries; also resolution appropriating \$8,000 for laying out Evergreen Cemetery; resolution making an appropriation of \$500 for maintenance of public buildings, and resolution authorizing the appropriation of \$625 for improvement of Jefferson street.

Wheeling, W. Va.—An ordinance has recently been presented to Council for an appropriation, a portion of which will be used for rebuilding the crematory destroyed by fire recently.

Milwaukee, Wis.—The erection of two new garbage crematories is being discussed; it is planned to erect one at the foot of Erie street and another in the northwestern part of the city.—David Rose, Mayor.

BIDS RECEIVED

Headland, Ala.—J. B. McCrary & Co., Atlanta, Ga., have the contract for a water plant for Headland.

San Bernardino, Cal.—The County Supervisors awarded the contract for the construction of a steel and concrete bridge of four 80-foot spans across the Santa Ana River on Mount Vernon avenue, to the Charles H. Seeley Company, of Denver, at \$8,990.

Shelton, Conn.—F. E. and W. H. O'Neil, of Hartford, have been awarded contract by the Board of Wardens and Burgessesses for the construction of pipe sewers at \$11,908.—D. E. Irinsmore, Borough Engineer.

Waterbury, Conn.—Contracts were awarded for paving East Farm street and for paving North Main, South Main, Benedict streets and Hamilton avenue, the successful bidders being Henry Kellner for the Farm street job and John F. Kerwin & Co. for the other streets. Metropolitan block will be used on East Farm street, the contract price being \$7,040, and Mack block on the other streets, the price being \$34,822.55. The full list of bids as tabulated by the City Engineer follows:

North and South Main streets, Benedict and Hamilton avenue: John F. Kerwin & Co.: Mack block, \$34,822.55; Johnsonburg block, \$35,081.25; Shawmut Shale block, \$34,210.80; Shawmut Clay block, \$34,956.90; Reynoldsburg block, \$33,962.10. Fred T. Ley & Co.: Mack block, \$38,066.95; Johnsonburg block, \$37,693.90. Connecticut Hassam Paving Company: Mack block, \$41,980.50; Johnsonburg block, \$41,980.50; Shawmut Shale block, \$40,488.30; Hassam pavement, \$24,571.50.

East Farm street: Edward McManus: Mack block, Metropolitan block, Johnsonburg block, Shawmut Shale block, Shawmut clay block or Reynoldsburg block, \$7,312.50; granite block, \$8,865. Fred T. Ley & Co.: Mack block, \$7,189; Johnsonburg block, \$7,120. Connecticut Hassam Paving Company: Mack block, \$7,815; Johnsonburg block, \$7,815; Shawmut Clay block, \$7,539. Henry Kellner: Mack block, \$7,224; Metropolitan block, \$7,040; Johnsonburg block, \$7,040; Shawmut Shale block, \$6,948; Reynoldsburg block, \$6,902; granite block, \$6,810.

Washington, D. C.—Bids were received as follows for annual supplies: Paving blocks: American Sewer Pipe Company, Pittsburgh, Pa., \$25.25 per M; Mack Manufacturing Company, Philadelphia, Pa., \$24.35; Metropolitan Paving Block Company, Pittsburgh, \$30; C. P. Mayer Block Company, Briggsville, Pa., \$22.20; James M. Porter, Pittsburgh, Pa., \$25 and \$20.80. Asphalt paving blocks: Washington Asphalt Paving Block and Tile Company, Washington, D. C., \$62 per M. Granite curbing: Georgia Granite Company, Atlanta, Ga., (1) 83 cents, (2) \$1.02, (3) \$1.04, (4) \$1.35; Feeney & Atherton, Woodstock, Md., (1) 87 cents, (2) \$1.09; Wise Granite Company, (1) 88 cents, (2) \$1.08, (3) \$1.04, (4) \$1.29; W. B. Evans, Lithonia, Ga., (1) 80 cents, (2) \$1.25, (3) 85 cents, (4) \$1.35; Davidson Granite Company, Lithonia, Ga., (1) 81 cents, (2) \$1.35, (3) \$1, (4) \$1.35; Gragdon, Fernald & Gordon, Bath, Me., (1) 85 cents, (2) \$1.15, (3) \$1.15, (4) \$1.75.

Sewer brick: Frederick Brick Works, Frederick, Md., \$8.50 per M; James M. Porter, Pittsburgh, Pa., \$7.55; C. P. Mayer Brick Company, Briggsville, Pa., \$16.75; New Washington Brick Company, Washington, \$9.73; Mack Manufacturing Company, Philadelphia, Pa., \$18.09. Terra cotta sewer pipe, lowest bidder, American Sewer Pipe Company, Pittsburgh, Pa.

Bids were received as follows for the construction of a sewer on Arizona avenue, near its intersection with Massachusetts avenue: (a) E. G. Gummel, 300 Rhode Island avenue, Washington, (b) Warren F. Brenizer Company, Second and O streets, S. E., Washington. Ordinary excavation, (a) 50 cents, (b) 50 cents; sewer brick masonry, (a) \$18, (b) \$14; vitrified brick masonry, (a) \$23 (b) \$21; concrete masonry "B," (a) \$9.64, (b) \$8.75; concrete masonry "C," (a) \$9.45, (b) \$8.25.

Atlanta, Ga.—The Special Committee of the Water Board decided to recommend that the contract for constructing the foundations and house for the new water works pump be awarded to the Griffin Construction Company, at \$29,330.

Trenton, Ill.—The following bids were received: T. A. Hardman, Olney, Ill., for furnishing 9 tons of 8-inch, 60 tons of 6-inch, 63 tons of 4-inch cast-iron water pipe and 2½ tons of specials for \$3,070, and for laying pipe, 390 feet of 8-inch pipe 40 inches deep, 20 cents per foot; 3,680 feet 6-inch pipe 38 inches deep, 17 cents; 4,850 feet of 4-inch pipe 36 inches deep, 15 cents. The contract for fire hydrants was awarded to Rensselaer Manufacturing Company, Troy, N. Y., for 15 Corey hydrants, 4 inches, 2½-inch nozzle, \$21.50 each. Also gate valves, six 8-inch, \$18; five 6-inch, \$9.50; eight 4-inch, \$6. Contract was awarded to Reeves & Skinner, St. Louis, Mo., for furnishing 750,000-gallon Eping-Carpenter duplex compound steam pump, 150-h.p., to pump against a head of

100 pounds, \$12,000.—W. A. Fuller, Civil Engineer, Chemical Building, St. Louis, Mo.

Aurora, Ind.—Scott & Walker, of Aurora, have been awarded the contract at \$12,483 for constructing a sewer system in District No. 1.

Fort Wayne, Ind.—Contracts for asphalt paving were awarded May 16 to the Metropolitan Engineering and Construction Company, 219 La Salle street, Chicago, Ill. The total bid was \$48,345.55. The Engineer's estimate for the work was \$49,149.91. Other bidders were the Barber Asphalt Paving Company and the Cleveland Trinidad Paving Company.—J. Frank Mungovan, C. E.

Greencastle, Ind.—D. C. Brackney and F. M. Glidwell & Son, Greencastle, have been awarded the contract by the county at \$51,723 for constructing 65,074 feet of stone roadway.—D. V. Moffitt, County Auditor.

Pana, Ill.—C. S. Gray has been awarded contract for new high school here to contain all the latest appointments and cost about \$55,000.

Indianapolis, Ind.—Bids were received on May 13 by the Board of Public Works for furnishing a 5-ton asphalt steam roller as follows: Iroquois Iron Works, of Buffalo, N. Y., \$1,525; the Pioneer Iron Works, of Chicago, Ill., \$1,737; the Kelly-Springfield Road Roller Company, of Springfield, Ohio, \$1,600; the Albert F. Zearing Contractors' Supply Company, of Indianapolis, bid to sell an "Erie" roller for \$1,750, or a "Pioneer" for \$1,850, and Charles Longenecker & Co., of New York, \$1,850.

The following bids were received on May 13 by the Board of Public Works for supplying asphalt for the city asphalt patching plant, about 400 or 500 tons: (a) Trinidad asphalt; (b) California asphalt: H. H. Symmes Company, Indianapolis, (a) \$28.95 per ton, (b) \$20.97; Barber Asphalt Paving Company, 114 Liberty street, New York, (a) \$29; Hoosier Construction Company, Indianapolis, (b) \$27 (Acme brand); California Asphaltum Sales Agency, Chicago, Ill., (b) \$23 (Malta brand); Warren Chemical and Manufacturing Company, New York (a) \$28.—Elaine H. Miller, City Engineer.

Normal City (Muncie postoffice), Ind.—William Birch, of Muncie, was awarded contract by the Town Board for construction of 3,000-foot sewer at \$11,761.

Tipton, Ind.—Ira F. Crail, city, has been awarded contract by the county at \$5,875 for constructing a gravel road in Cicero Township.—J. F. Barlow, County Auditor.

Davenport, Ia.—Contract for brick paving was let to the Davenport Construction Company, 318½ Brady street, for \$3,100.—T. Murray, City Engineer.

Dike, Ia.—The contract to install complete water system here was awarded on May 6 to the Turner-Roland Company, of Des Moines, at \$6,082.

Argentine, Kan.—The Kansas Bitulithic Paving Company, Dwight Building, for bitulithic paving for the city of Argentine, \$55,000.—E. Z. McCullough, City Clerk.

Kansas City, Kan.—Johnson & Brown have contract for two vitrified pipe sewers; cost, \$2,000.—D. E. Cornell, Mayor; R. L. McAlpine, City Engineer.

Salina, Kan.—C. T. Snyder has been awarded the contract at \$3,369 for constructing 1,660 feet of sewer in Walnut street, including five manholes, four catch basins and eight smaller catch basins.

Covington, Ky.—Heeter & Sons have the contract for constructing cement sidewalks in Greenup street, and Ben Dressman has the contract for constructing walks in several other streets.

Louisville, Ky.—Lee Figg was awarded the contract for paving Eighteenth street, from Dumessil street to Magnolia street, with granite block, at \$2.46 per square yard.—J. P. Claybrook, Chief Engineer Public Works.

Leesville, La.—W. C. Whitney of Beaumont, Tex., has been awarded contract for construction work on new jail for Vernon parish, to be modern brick construction and cost about \$17,000.

New Orleans, La.—The following contracts have been awarded by the Executive Committee: Rubber hose, C. T. Patterson & Co.; rubber boots, Whitney Supply Company; building material, Carolina Portland Cement Company; building material, Allen Tupper; building material, Salmen Brick and Lumber Company; building material, Jahncke Navigation Company; printing semiannual report, L. Graham Company; coal, Tutwiler Coal and Coke Company; poles, Southern Saw Mill Company.

Baltimore, Md.—E. J. O'Connell, Boston, Mass., has been awarded the contract for the construction of Sections Nos. 1 and 2 of the east low-level intercepting sewer at \$187,502.

Holyoke, Mass.—The contract for purchasing a tandem steam road roller has been awarded to the Buffalo Steam Roller Company, of Buffalo, N. Y.—Oscar C. Ferry, Assistant City Clerk.

Salem, Mass.—The County Commissioners

at Lynn opened the bids on furnishing the metal furniture, filing cases, wood furniture, carpets, shades and other fittings for the new Registry of Deeds Building. The bids were in seven sections, as follows:

For metallic furniture: Canton Art Metal Company, Canton, O., \$21,500; Van Dorn Iron Works, Cleveland, O., \$26,977; Art Metal Construction Company, Boston, \$38,875; Library Bureau, Boston, \$45,000; Ohnstrand Metal Furniture Company, Jamestown, N. Y., \$37,193.

For wood furniture: Adams, Smith & Gibbs, Boston, \$3,316.08; Wollaeger Manufacturing Company, Milwaukee, \$13,796; Library Bureau, \$3,505; Derby Desk Company, \$1,516.80.

Judges' Bench: Library bureau, \$600; Derby Desk Company, \$660; Woodbury Leighton Company, \$950.

Shades: H. T. Lindsay, Boston, \$597; Almy, Bigelow & Washburn, Salem, \$350; William G. Webber Company, Salem, \$395.75; Henry Seigel Company, Boston, \$344.75.

Floor coverings: John H. Pray & Sons Company, Boston, linoleum, \$3,751.40; cork carpet, \$2,024.27; W. G. Webber Company, Salem, linoleum \$3,853, cork carpet \$2,958; H. Seigel Company, Boston, linoleum, \$4,374, cork carpet, \$3,699.

Vacuum cleaning apparatus: American Air Cleaning Company, Boston, \$2,150; Sanitary Dust Remover Company, Boston, \$2,425; Blaisdell Machinery Company, \$1,975.

Electric elevator: Salem Elevator Works, \$2,650; Bodessa Elevator Company, Milwaukee, \$3,717; Otis Elevator Company, Cleveland, O., \$3,725.

Detroit, Mich.—Council has awarded contracts for paving with cedar blocks, as follows: Dragon avenue, J. A. Mercier, 210 Hammond Building, \$18,114.01; Seyburn avenue, Thomas E. Currie, 12 Peninsular Savings Bank Building, \$4,547.74; Livermoor avenue, F. Porath & Son, \$7,503.20.—John J. Haarer, Commissioner Department of Public Works.

Iron River, Mich.—Fred M. Prescott Steam Pump Company, Milwaukee, Wis., has been awarded the contract for the construction of a 2,000,000-gallon triple-expansion and condensing pumping engine.

Port Huron, Mich.—John Delyia was awarded the contract, at \$7,906, for repaving Quay street with Metropolitan brick.

Van Camp & Co. have been awarded the contract for building 50,000 square yards of sidewalk for the city.

White Bear (White Bear Lake postoffice), Minn.—The contract for constructing the water main extension, consisting of about 1½ miles of pipe, has been awarded by the town to Pastoret & Lunz, of Duluth, Minn., at \$8,684. Bids were opened on May 8.

Biloxi, Miss.—The Harrison County Commissioners have awarded the contract to Austin Bros., of Gulfport, at \$7,775 for constructing a drawbridge across the Tchoutacabouffa River, six miles from here.

Columbia, Mo.—H. H. Tandy was awarded the contract for paving College avenue and East Broadway, at \$24,711.75 and \$16,450, respectively.

Ft. Omaha, Neb.—George J. S. Collins has been awarded the contract for the construction of terraces, macadam roads, etc., at \$11,341.

River Vale (Westwood postoffice), N. J.—The following bids were received by the town for macadamizing River Vale, Cedar, Demarest and Piermont avenues: John McDabb, Bound Brook, N. J., \$38,809; E. C. Humphrey & Co., Hackensack, N. J., \$38,517; John C. Tierney, Hoboken, N. J., \$31,141 (awarded contract).—John W. B. Duncan, Township Clerk.

Albany, N. Y.—State Engineer and Surveyor Skene received bids as follows for road improvements: Fleming road, No. 384 Cayuga County; M. F. Dollard, Albany, \$13,579.80; Auburn-Seneca Falls, No. 590, Cayuga County, F. T. Lay & Co., Springfield, Mass., \$55,000; Little Falls-East Creek, No. 456, Herkimer County, Joseph Walker, New Paltz, N. Y., \$24,500.

Monroe, N. Y.—The Joseph Sharpe Construction Company, of Paterson, N. J., has been awarded contract for construction of sidewalks, driveways, curbs and gutters at the following prices: Sidewalks, 19 cents per square foot; driveways, 22 cents; curbs, 50 cents per linear foot; cobblestone gutters, 9 cents per square foot.—Fred J. Knight, Engineer.

Dunkirk, N. Y.—Bids were received for street paving from the following contractors for Dove street: L. H. Gipp, Buffalo, \$22,081; Interstate Paving Company, Utica, \$16,484; Goggin & Schultz, Fredonia, \$18,709; A. J. Corrigan, Jamestown, \$20,617; Mayer Bros., Erie, Pa., \$20,078; R. C. Ruthven, Dunkirk, \$21,622.

For Ruggles street the bids from the same bidders named in the same order were as follows: \$18,889, \$14,379, \$16,014, \$19,724, \$17,840, \$17,174, \$18,442. The low bidders were Goggin & Schultz, Ruggles street, pavement to be of brick. R. C. Ruthven was low bid-

der on Dove street, the work to be asphalt.—L. N. Murray, Clerk.

Mt. Kisco, N. Y.—The following bids were received by the Board of Trustees for constructing about 13 miles of sewers: F. H. Cowin Company, Boston, Mass., \$77,071; S. Amanna, New York City, \$64,969; A. M. Cusack, Boston, Mass., \$67,136; Pierson Engineering and Construction Company, Bristol, Conn., \$69,380; Briggs & McLaughlin, New York, \$71,953; Richard S. Stack, White Plains, N. Y., \$76,446; Frank Nordone, Mt. Vernon, N. Y., \$77,683; C. F. Brown & Son, White Plains, N. Y., \$79,266; Charles Sillery & Son, Mt. Vernon, N. Y., \$79,569; James Garofano, Mt. Vernon, N. Y., \$80,702; F. G. Fowler, Mt. Kisco, N. Y., \$81,685; Haggerty Construction Company, New York, \$81,344; Coughlin & Shields Company, Boston, Mass., \$89,373; Golden & Lansing, Schenectady, N. Y., \$112,918.—Fred. J. Carpenter, Clerk of Board.

New York, N. Y.—The Uvalde Asphalt Paving Company was awarded contract by the Park Commissioners for repairing asphalt roadway pavements where directed, at \$11,370, the work requiring 7,500 cubic yards asphalt pavement and 20 cubic yards Portland cement concrete. Other bidders were: Asphalt Construction Company, \$21,055; Barber Asphalt Paving Company, \$15,835; Sicilian Asphalt Paving Company, \$14,250.

The Public Service Commission has awarded contracts for the construction of five of the sections of the Fourth Avenue subway in Brooklyn. These were the awards:

Contract No. 2, extending from Willoughby street to Ashland Place, William Bradley—railroad work, \$3,430,019; pipe galleries, \$58,695; total, \$3,494,714.

Contract No. 3, from Ashland Place to Sackett street, William Bradley—railroad work, \$3,392,091.50; pipe galleries, \$208,135; total, \$3,600,326.50.

Contract No. 4 from Sackett street to 10th street, E. R. Smith Contracting Co.—railroad work, \$2,283,553.30; pipe galleries, \$206,672; total, \$2,490,205.30.

Contract No. 5, from 10th street to 27th street, the Tide Water Building Co., and Thomas B. Bryson—railroad work, \$1,945,640.50; pipe galleries, \$251,076; total, \$2,196,716.50.

Contract No. 6, from 27th street to 43d street, E. E. Smith Contracting Co.—railroad work, \$2,008,982.80; pipe galleries, \$173,665; total, \$2,882,746.80.

The total of the awards for railroad work is \$13,866,267, and for pipe galleries \$898,243, making an aggregate cost for the five sections of \$14,764,510. No award was made on the first section, which was one of the two which James P. Graham bid for, whose work for the city so far has been mainly in the building of sewers in Bensonhurst and whose bids for the two sections were much lower than the bids sent in by his nearest competitors. Mr. Graham found that he had made his estimates of the cost of the work too low and he appealed to the Commission to be allowed to withdraw his bids.

Bids were opened by John F. Ahearn, President Manhattan Borough, for repairing and maintaining sheet asphalt pavement in three sections of Manhattan Borough, as follows: Southern section: (a) 45,000 square yards asphalt pavement, including binder course; (b) 400 cubic yards Portland cement concrete; (c) totals: Uvalde Asphalt Paving Company, (a) \$1.48, (b) \$6.78, (c) \$69,312; Sicilian Asphalt Paving Company, (a) \$1.55, (b) \$6.50, (c) \$72,350; Barber Asphalt Paving Company, (a) \$1.56, (b) \$7.53, (c) \$73,212. Central section: (a) 45,000 square yards asphalt pavement, including binder course; (b) 400 cubic yards Portland cement concrete; (c) totals: Uvalde Asphalt Paving Company, (a) \$1.48, (b) \$6.78, (c) \$69,312; Sicilian Asphalt Paving Company, (a) \$1.52, (b) \$6.50, (c) \$71,000; Barber Asphalt Paving Company, (a) \$1.56, (b) \$7.53, (c) \$73,212. Northern section: (a) 60,000 square yards asphalt pavement, including binder course; (b) 400 cubic yards Portland cement concrete; (c) totals: Uvalde Asphalt Paving Company, (a) \$1.48, (b) \$6.78, (c) \$91,512; Sicilian Asphalt Paving Company, (a) \$1.55, (b) \$6.50, (c) \$95,600; Barber Asphalt Paving Company, (a) \$1.56, (b) \$7.53, (c) \$96,612; Asphalt Construction Company, (a) \$2.05, (b) \$7.50, (c) \$126,000.

Bids were opened by the Department of Parks for furnishing and delivering as required on Riverside drive, between Seventy-second and One Hundred and Twenty-second streets, 105,000 asphalt blocks in all. The contract was awarded to the Harlem Construction Company at \$7,833. The Barber Asphalt Paving Company submitted a bid of \$7,980.

Rochester, N. Y.—The Monroe County Building Commissioners received bids from Weaver, Palmer & Richmond to furnish rubber hose at 17 cents a foot for $\frac{3}{4}$ -inch and 37 for $1\frac{1}{2}$ -inch and its offer was accept-

ed; the Van Curan-Bengal Company's bid was 21 and 40 cents.

Rochester, N. Y.—There was only one bidder for new fire apparatus, the Combination Ladder Company, of Providence, offering to rebuild aerial truck No. 2 and furnish a new combination hose and chemical wagon for \$5,950. The Board of Contract and Supply did not let the contract.

For an automobile truck to carry the tools and paraphernalia of the water works repair gangs, the Union Motor Car Company offered two kinds, \$1,700 and \$1,950, but failed to accompany its bid with the required check, so it was thrown out as informal. J. J. Manderey offered to furnish a Packard for \$3,350 and the United States Automobile Company offered a car for \$1,775. No award was made.

There were bids for Albemarle street macadam pavement, with brick between the car tracks. The prices in brick ran from \$1.90 to \$2.23 a yard.

Byron H. Punnett bid low on a metallic book case for the treasurer's office, his price being \$260.

The board reconsidered the award of a contract for hauling pipe to W. A. Margrander and relet it to William Baker for \$1,520. Margrander said he made a mistake in his bid.

Waketon, N. C.—M. A. Moser, of Raleigh, has been awarded contract for new school here to contain 14 rooms and cost \$11,300.

Bryan, O.—Bids were received for furnishing and laying 7,000 feet of 4-inch water pipe, $\frac{1}{4}$ feet deep. Contract was awarded to the New York Construction Company, Columbus, at 44 $\frac{1}{2}$ cents a linear foot. Also ten 4-inch fire hydrants for \$523, and eight 4-inch gate valves, to stand pressure of 150 pounds, at \$8 each.—R. L. Starr, President Board of Trustees.

Cincinnati, O.—Edward Ryan of Springfield is low bidder for the improvement of Spring Grove avenue, his bid amounting to about \$200,000.

Cincinnati, O.—The following bids were received by the Board of Public Service for improving the following streets: Probasco avenue, from Marshall avenue to Clifton avenue, by grading, setting limestone curb, paving the gutters with brick, macadamizing the roadway, etc.: The Kirchner Construction Company, \$13,910; the Louis Drach Construction Company, \$14,078; John Funke, 2466 Mickens avenue, \$15,028; A. J. Henkel & Bro., \$16,010; John Goodman, \$15,430; John Ruebel & Bro., \$15,725. Juergens avenue, from Greendale avenue to Lauks west line, by grading, setting sandstone curb, paving the gutters with brick, macadamizing the roadway, etc.: John Ruebel & Bro., \$5,119; the Kirchner Construction Company, \$5,320; the Louis Drach Construction Company, \$5,215; August J. Henkel & Bro., \$5,420. Grace avenue, from Linwood avenue to Observatory, by grading, setting artificial cement curb and gutter, macadamizing and paving the roadway with rock asphalt: Minor Carr, \$16,168; the Kirchner Construction Company, \$16,349; M. Sullivan & Son, \$16,450; the Louis Drach Construction Company, \$16,399. Ehrman avenue, from Norwich avenue to Carthage pike, by grading, setting sandstone curb, macadamizing the roadway, etc.: John Ruebel & Bro., \$11,106; the Louis Drach Construction Company, \$11,304; the Kirchner Construction Company, \$11,247.

The following bids were received for improving Fifth avenue, from Eighth street to Glenway avenue: John Ruebel & Bro., \$25,832; the Louis Drach Construction Company, \$25,865; George P. Walker, \$26,954; the Kirchner Construction Company, \$27,211; John M. Bolan, \$25,897.

William T. Flynn has been awarded the contract for paving Mad Anthony street with brick, from Spring Grove avenue to Knowlton street, at \$3,937.

The following bids were received for paving Burnett avenue, from Shiloh avenue to Forest avenue, with wood block: The United States Wood Preserving Company, \$71,287; Russel & Jennison, \$71,326.

The following contracts for street improvements have been awarded: Berlin street, brick paving, Kirchner Construction Company, Eighth and Plum streets, \$12,686; Chestnut street, asphalt paving, the Barber Asphalt Paving Company, \$6,164; Lyon street, brick paving, Moran & Springmeier, \$3,761.

The following are the bids received for improving the following streets: Glendora avenue, from St. Clair street to a point 593 feet north, by grading, setting sandstone curb and paving the roadway with brick: A. J. Henkel, \$7,331; Allen Kissinger, \$10,129. Bryant avenue, from Middleton avenue to Whitfield avenue, by grading, setting limestone curb, paving gutters with brick, macadamizing the roadway, etc.: John D. Washburn, \$3,177; August J. Henkel, \$3,360. Harrison avenue, from Queen City avenue to Lot 27, by grading, setting granite curb, paving the roadway with granite, etc.: August J.

Henkel, \$37,930; Kirchner Construction Company, \$38,602; Louis Drach Construction Company, \$39,245; John Ruebel & Bro., \$39,251; Edward Ryan, Springfield, \$40,071; E. G. Nave Bros. Company, \$38,832; M. Sullivan & Son, \$42,277. Dury avenue, from Forest avenue to Northern avenue, by grading, setting sandstone curb, paving the gutters with brick, macadamizing the roadway, etc.: August J. Henkel, \$32,716; Kirchner Construction Company, \$35,580; Louis Drach Construction Company, \$35,857; John Ruebel & Bro., \$37,363; M. Sullivan & Sons, \$37,681. Harrison avenue, from Fairmount avenue to west line of Section 32, by grading, setting granite curb, paving the roadway with granite, etc.: August J. Henkel, \$94,979; E. G. Nave Bros. Company, \$97,654; Quill & Poos, \$108,895; John Ruebel & Bro., \$105,461; M. Sullivan & Son, \$101,110; Kirchner Construction Company, \$101,428.

Columbus, O.—The Board of Public Service, Edward W. Hirsch, Secretary, has awarded the following street paving contracts: College street, from Main to High street; William E. Schwartz, \$4,595; Fourth street, from Innis to Southwood street, Baldwin Bros. & Graham, \$16,813; Gay street, S. T. Knight, \$1,200; Mithoff street, from Parsons to Ann street, Baldwin Bros. & Graham, \$45,029; Mohawk street, from Livingston to Frankfort street, S. T. Knight, \$15,000; Norwich street, from High to Neil street, S. T. Knight, \$8,800.

Dayton, O.—The following bids were received by the Board of Public Service for furnishing ten carloads of asphalt or less for the repair of streets: Barber Asphalt Paving Company, New York, \$30.40 per ton; F. Otto Kemlein, on three different grades, at \$29.45, \$31.45 and \$29.45, respectively; Trinidad Asphalt and Rubber Company, \$27.15 per ton; California Asphaltum Sales Agency, \$28 per ton.

The Servers awarded the contracts for the improvement of the following streets: Point street, to Jay Glazier, at \$412; George street, to C. Hoolihan, at \$782; alley east of Pritz street, from Newcom to alley north, to W. Boyd, at \$436.40; alley east of Newcom, from Pease to Bank, to W. Boyd, at \$1,252.80.

Lancaster, O.—The Board of Public Service has awarded the contract for constructing the Maple street storm water sewer in Sewer District No. 3, to E. H. Ames, of Columbus, at \$36,718.

Martin's Ferry, O.—Archer & Day, of Bellaire, have been awarded the contract for the construction of a culvert on Center street at \$3,600.

Toronto, O.—E. A. Freshwater & Sons were awarded the contract by the Toronto Realty Company for grading a roadway and constructing piers and abutments for a bridge at about \$11,000.

Tulsa, Okla.—The Canton Bridge Company of Canton, O., was awarded the contract for seventeen bridges in Tulsa County, Okla., for \$19,445, this being the lowest of twelve bids submitted.—C. F. Rogers, County Clerk.

Altoona, Pa.—The Board of Public Works has awarded contracts for paving thirty-four thoroughfares to Hagaman, Miller & Hagaman, of Rochester, N. Y. Five contracts were held over until next year, owing to the appropriation being exhausted. The bids of the Hagaman, Miller & Hagaman Co. ranged from \$2.21 to \$2.45 a square yard. A communication from Bowman Bros., of McKeesport, was read, stating that it was their impression that they were low bidders on about 60,000 feet of paving and demanded the contracts. Chairman Andrews stated publicly that the firm was low on but 12,000 feet and that the figures taken by their representative at the time of the reading of the bids were incorrect. Following are the thoroughfares to be paved: Howard street, Second to Third streets; Fifteenth street, Tenth to Eleventh avenues; Twenty-second avenue, Third to Ninth streets; Thirteenth alley, Twelfth to Thirteenth streets; Howard avenue, First to Second streets; Twenty-second avenue, Ninth to Eleventh streets; Twelfth alley, Eleventh to Twelfth streets; Fourteenth avenue, Washington avenue to Eighteenth street; Eighth street, Green and Willow avenues; Sixth street, between Third and Fifth avenues; Fifth street, between Lloyd and Second streets; Fourth avenue, between Third and Sixth streets; Third street, between Bell and Bellwood avenues; First avenue, from First to Tenth streets; Second avenue, between Seventh and Twelfth streets; First avenue, between Third and Fifth streets; Third, between Fifth and Sixth streets; Fourth avenue, between Lloyd and Third streets; Third avenue, between Lloyd and Twelfth streets; Third avenue, between Fourth and Fifth streets; Fifth avenue, between Eleventh and Twelfth streets; Fifth avenue, between Ninth and Tenth streets; Sixth alley, between Eleventh and Twelfth streets; Twelfth street, between First and Ninth avenues; Seventh avenue,

from Seventeenth street to the city line; Sixth avenue, between Fifteenth street and the city line; Twenty-sixth street, from Maple to the Pennsylvania Railroad; West Chestnut avenue, between Twenty-fifth and Twenty-sixth streets; Union avenue, between Eighth avenue and Twenty-seventh streets; West Chestnut avenue, between Twenty-third and Twenty-fourth streets; Twenty-fourth street, between North Ninth and Fourth avenues; Seventeenth street alley, Union to Eleventh avenue.

The Board also awarded the contract for the following sewers to Isaac Bender, he being the only bidder: In Ninth street, between Howard alley and Sixteenth street, and in Twenty-first alley and Washington avenue.

Beaver, Pa.—Council has awarded the contract was awarded to H. D. McBean and the Company of Pittsburgh, the low bidders. Twenty-two bids were received. The entire town will be sewerized and it will involve an expenditure of over \$31,000. Work will be started as soon as preliminary details are attended to and will be pushed to completion with all possible speed.

Coraopolis, Pa.—James D. Harper, city, has been awarded the contract for the removal of garbage for a period of one year.

Harrisburg, Pa.—The County Commissioners opened six bids for the construction of a bridge over the Spring Creek on Nineteenth street at the Parkway. The bids were:

Henry and William H. Opperman, bridge to be constructed in nine weeks, wood block, \$7,770.36; brick, \$7,745.36; asphalt, \$7,745.36; macadam, \$7,400; wood floor, \$7,170. Coder & Miller, the bridge to be completed in twelve weeks, wood block, \$9,429; brick, \$9,326; asphalt, \$9,544; macadam, \$9,271; wood floor, \$8,547. United Ice and Coal Company, bridge to be completed in forty working days, wood block, \$10,726; brick, \$10,626; asphalt, \$10,626; macadam, \$10,400; wood floor, \$10,526. Neilson, Meredith & Co., Chambersburg, bridge to be completed in eighteen weeks, wood block, \$10,172; brick, \$9,956; asphalt, \$9,884; macadam, \$9,810. Buchanan & Alleman, bridge to be finished in fifteen weeks, wood block, \$10,216; brick, \$10,216; asphalt, \$10,216; macadam, \$9,690; wood floor, \$9,173. Ferro-Concrete Company bid only on the concrete bridge at \$7,046.

Huntingdon, Pa.—The T. M. Oaks Company has been awarded the contract for the construction of main sewers in Moore and Mifflin streets at \$23,889.

Kingston, Pa.—The Town Council awarded a contract for the paving of Rutter, College and Chestnut streets to Robert W. Hensen of Geneva, N. Y., his bid of \$42,326.38 being the lowest of three submitted. The others who presented proposals were: D. M. Rosser, \$43,794.75; Bolton G. Coon, \$44,642.91. The bid of the successful contractor calls for the paving of the three streets with Standard Clearfield brick, with curbings having Wainwright steel protectors.

Manor, Pa.—P. F. McCann, of Greensburg, has been awarded the contract by the township for the improvement of Garrets Run road at \$43,549.

Reading, Pa.—L. H. Focht & Co., city, received the contract for the Dauberville bridge of reinforced concrete 4-arch, 75 feet long, at \$19,500.—Ambrose L. Rhoads, County Comptroller.

Woonsocket, R. I.—The following bids have been received for constructing 2,700 feet of sewer 9 feet deep, including manholes, the city furnishing the pipe: Cinedella & Co., \$1.55 per linear foot; Cumberland Construction Company, \$1.24; Globe Coal Company, \$1.35; C. F. Parker, \$1.34; C. Crankshaw, \$1.50; O'Shea & Bailey, \$1.38½; Ryan-Numack Company, \$1.20; \$5 per cubic yard for rock excavation and \$35 per M for sheathing left in place.—Frank M. Mills, City Engineer.

Memphis, Tenn.—The contracts for paving work on nine different streets, the majority of which are located in the eastern part of the city, were awarded to H. W. Brennan by the Legislative Council; the contractor's total bid for the work was \$25,352.30 and the award was made on the recommendation of City Engineer J. H. Weatherford, under the front foot assessment ordinance. Mr. Brennan's bids for the different streets are as follows: East Joseph place, \$3,077.34; Rozelle street, \$2,240; North Montgomery street, \$4,779.78; Meriwether avenue, \$2,180; North Marks street, \$574.87; Carr avenue, \$2,179; Woodlawn avenue, \$2,202; Ayers street, \$4,804.31; Harbert avenue, \$1,335. His bid to pave a small section of North Cochran street for \$819 was considered too much, although he was the lowest bidder, and it was promptly rejected on the recommendation of the City Engineer. The work will be done by the city's forces.

The Memphis Asphalt Paving Company was awarded the contract to pave Beale avenue, from South Fourth street to Orleans street, at a total cost of about \$13,500. The

company's bid was \$2.19 per square yard, but this did not include a guarantee of maintenance. Upon the motion of Councilman Dunscomb a guarantee and maintenance for a term of five years was included at a cost of 5 cents more per square yard, or a total cost of \$300.

The contract for furnishing the city with 200 new fire plugs was awarded to the Chickasaw Iron Works without comment. The firm offered to furnish the plugs for \$29.75, which is considerably cheaper than the city has been paying in competitive bidding on past contracts. Only one bid was submitted for this lot of 200 plugs.

Wichita Falls, Tex.—Deer & Earley have been awarded the contract for the construction of the sewer system at \$28,800.—John W. Maxcy, Houston, Engineer.

Centralia, Wash.—Council has let contracts for grading streets and building sidewalks in the residence district of Centralia. The lowest bid was \$28,400. The City Engineer's estimate was \$29,000. There will be in the neighborhood of 17,000 linear feet of sidewalk to put in. Many property owners have put in concrete sidewalks during the last few months. All the residence streets will be graded. The property owners who have already put in sidewalks will be allowed at the rate of 27½ cents per linear foot from the assessments against their property.

Seattle, Wash.—The Board of Public Works has awarded a contract for 180,000 incandescent lamps, from two to sixty candle power, to the Central Electric Company at an average rate of 17 cents each. The existence of a combination between dealers in electrical fixtures was developed through questions of City Engineer R. H. Thomson, who forced an admission from representatives of some of the companies submitting bids that it made no particular difference which one was awarded the contract. The bid of the Central Electric Company was regarded as the most satisfactory, inasmuch as it offered the lamps delivered in Seattle, the municipality to be protected from all loss by breakage.

Eighteen bids for the construction of the new armory for the Second Regiment, National Guard of Washington, at Western avenue and Lenora street, were opened at the office of Colonel George B. Lamping in the Colman Building, and all but one were below the available appropriation of \$130,000. Matthew Dow submitted the low bid on the general contract. He bid merely on the construction of the building, omitting the steel roof, heating and plumbing. His bid was \$94,000. H. Chase, of Seattle, sent in the low bid on the steel roof at \$9,403. The lowest plumbing bid was that submitted by the Nelson Plumbing and Heating Company, for \$4,066. H. Chase also submitted the low bid for the heating plant, at \$5,150. The aggregate of all lowest bids for the whole construction amounts to \$113,609, or \$16,391 under the amount of the appropriation. This leaves a balance of that amount, out of which architect's fees must be paid.

Spokane, Wash.—The contract has been awarded to Foster & Cardin for the construction of a trunk sewer in Sumner avenue, at \$17,915.

Chester, W. Va.—E. A. Freshwater & Sons have been awarded an \$11,000 contract by the Toronto, Ohio, Realty Company for grading roadways, building piers and bridge abutments.

Madison, Wis.—The contract for the erection of the building for the separate heating, lighting and power plant for the new State Capitol has been let to T. C. McCarthy of Madison, whose bid of \$108,000 was the lowest submitted; the contract includes the masonry, carpentry, roofing, plastering, plumbing and electrical work.

Racine, Wis.—Hans C. Hanson was awarded the contract, at \$2,501.55, for 869 feet of 18-inch pipe, 300 linear feet of 15-inch pipe, four manholes, two new manholes, etc.

Griffith & Jones were the lowest bidders, at 43 cents per cubic yard, for grading Peck avenue and Wilson street.

Ft. D. A. Russell, Wyo.—Conrad Walker, North Platte, Neb., was the lowest bidder, at \$3,975, for a sewer system at Ft. D. A. Russell.

W. W. Keefe, Cheyenne, was low bidder, at \$7,462.50, for a water works system at Ft. D. A. Russell.

Gananoque, Ont., Can.—F. Dolan has been awarded the contract by the city for constructing concrete sidewalks and curbs at 13½ cents per square foot for walks, 13½ cents for crossings, and 16 cents per linear foot for detached curb.

Prince Albert, Sask., Can.—The following bids were received for furnishing water pipe: Gartshore Thompson Company, Hamilton, Ont., \$8,955; J. T. Farmer, Montreal, \$9,239; R. D. Wood & Co., Philadelphia, \$9,358; W. Beverly Robinson, Montreal, \$10,405; F. Hanson, Montreal, \$8,912. The items bid on were 9½ tons of 6-inch cast-iron pipe, 8½ tons

8-inch cast-iron pipe and 4 tons of specials. Bids for laying the pipe were as follows: H. D. McBean, Prince Albert, \$32,761; Knox & Haws, Prince Albert, \$32,258; F. F. Frey, Regina, \$32,630; Saskatoon Engineering Company, Saskatoon, \$38,770; Haberson, Krag, Prince Albert, \$45,000; Municipal Construction Company, Saskatoon, \$56,278. The contract was awarded to H. D. McBean, and the items were as follows: 1,483 8-inch 9 feet deep, 80 cents; 2,150 8-inch, 15 feet deep, 40 cents; 829 6-inch, 15 feet deep, 75 cents, independent; 6,949 6-inch, 15 feet deep, 35 cents. The contract for hydrants was awarded to J. McAvity & Sons, St. John, for nine 2-way Mathews hydrants, \$43.50; for eight 3-way hydrants, \$47.50. The contract for gate valves also went to J. McAvity & Sons, four 8-inch, \$20 each; twenty-one 6-inch, \$11.50.—C. C. Davidson, City Clerk.

PATENT CLAIMS

887,188. **Process of Producing Road Metal.** John F. Burn, Detroit, Mich. Serial No. 323,191.

The process of producing a non-friable road metal which consists in slowly cooling masses of initially molten furnace slag to thoroughly anneal the solidified slag, and utilizing the residual heat in said masses to produce chunks of tenacious material through the action of water impinging thereon.

887,836. **Water-Stop for Deep Wells.** Harvey J. Newhouse, Yorktown, Ind. Serial No. 348,341.

A device of the kind described, comprising an open annular main member, suitably threaded on its upper portion, a ring screwed down thereon to the base of threads, and a secondary open annular member threaded on its interior and screwed down on the main member into close contact with the ring, and a non-porous elastic sleeve secured to the main member its upper end leaning against the lower side of the ring and its lower end extending slightly below the lower edge of the main member, substantially as described.

887,874. **Street-Scraper.** Hugh T. Toy, Sidney, Ohio. Serial No. 420,599.

In a street scraper, the combination of a handle, supporting wheels, a scoop having hinged connection with said handle and means for retaining the scoop in various positions relative to the handle.

888,192. **Centrifugal Pump and Turbine.** Edmund S. G. Rees, Dunsear, Oken, near Wolverhampton, England. Serial No. 403,409.

In multi-stage centrifugal pumps and turbines, a rotor comprising two fluid pressure reservoirs separated by a central partition having fluid passages which cross each other within the body of the rotor to connect the left hand reservoir with the right hand inlet or eye, and the right hand reservoir with the left hand inlet, and means for leading the fluid from the delivery side of one reservoir to the inlet or eye of the other reservoir.

888,218. **Water-Meter.** Frederick C. Bogk, John J. Leach and Albert W. Wingender, Milwaukee, Wis. Serial No. 366,898.

In a water meter of the class described, the combination within an inclosing case of a measuring chamber, a plurality of vertical posts formed integrally with the upper part of said chamber, a gear supporting disk supported on the upper ends of said posts, a gear frame and a plurality of gears and gear shafts supported on said disk, means for rigidly connecting said posts, disk and gear frame together and means for suspending said gear frame and connected parts from the top of said inclosing case.

INCORPORATIONS

Berlin Electric Light, Heat & Power Co., Berlin, N. Y.; to manufacture and supply electric light, heat and power; capital, \$20,000. Incorporators: James C. Cowee and William C. Baxter, 51 River street, Troy; Arthur E. Greene, Berlin, N. Y., and others.

International Concrete Construction Co., New York, N. Y.; general contractors, building, etc.; capital, \$50,000. Incorporators: Malcolm A. Niernsee, 362 Riverside drive; Joseph W. Stinson, 301 West Ninety-first street; George A. C. Christiany, Charles A. Riegelman, Benjamin H. Stern, 141 Broadway, all of New York.

Patapsco Electric Co., Bayonne, N. J.; to manufacture and distribute electric current; capital, \$500,000. Incorporators: Charles S. Noe, Frederic C. Earl, George Carrigan, Bayonne.

Somerville Light and Ice Co., Oklahoma, Okla.; capital, \$25,000. Incorporators: J. D. Giddings, R. E. B. Bledsoe and others, Somerville, Tex.

Winchester Electric Co., Winchester, Ill.; to supply light, heat and power; capital, \$10,000. Incorporators: William Milhouse, C. H. Condit and Sol Hainsfurther.

Proposals

COVERED MASONRY RESERVOIR

Board of Water Commissioners,
43 Bridge St., Springfield, Mass.

May 20, 1908.

Sealed proposals will be received by the Board of Water Commissioners of the City of Springfield, Mass., until 2 o'clock, Thursday, June 18, 1908, for the construction of a covered masonry reservoir with gate houses, dwelling and appurtenances, as included under Little River Water Supply, Contract No. 3.

The site of the work is on Provin Mountain in the town of Agawam, five miles from the city of Springfield. The reservoir will cover an area of 92,000 square feet and will have a depth of twenty-six feet.

Each bid must be accompanied by a certified check drawn upon a State or National bank for \$5,000. A bond of \$40,000 will be required, to be executed by the party to whom the contract is warded.

Booklets containing information for bidders, form of proposal, specifications, contract and bond may be obtained at the office of E. E. Lochridge, Chief Engineer, Springfield, Mass., and at the office of Hazen & Whipple, Consulting Engineers, 103 Park Avenue, New York City.

The Board reserves the right to reject any or all bids or to accept any bid should they deem it for the best interests of the city so to do.

C. H. BENNETT,
Chairman.

E. E. STONE.

W. E. SANDERSON,

Board of Water Commissioners.

E. E. LOCHRIDGE,

(22-23) Chief Engineer.

REINFORCED CONCRETE VIADUCT

Commonwealth of Pennsylvania.
State Highway Department,

Harrisburg, Pa.

Sealed proposals will be received by the State Highway Department of Pennsylvania, under the Act approved June 13, 1907, for the erection of one reinforced concrete viaduct, over Ten Mile Run Branch, P. R. R., on the National Pike, in Washington County. Plans and specifications can be seen at the offices of the State Highway Department, room 536, 1011 Chestnut street, Philadelphia; 303 Hostetter Building, Pittsburgh; Washington, Pa.; and Harrisburg, Pa. Bidding blanks will be furnished by the State Highway Department upon request. Bids must be endorsed "Proposals for Erection of Concrete Viaduct in Washington County," and received at the office of the State Highway Department not later than June 5, 1908.

JOSEPH W. HUNTER,
(22-23) State Highway Commissioner.

CEMENT WALKS, GRADING, SEWER

Cambridge City, Ind.

Sealed bids will be received by the Town Board of Cambridge City, Indiana, John E. Gray, President, at the office of the Town Clerk, F. W. Dirk, until 7:30 p.m., June 9, for the following improvements:

1,500 lineal feet of 4-foot cement sidewalk.
2,200 lineal feet of 5-foot cement sidewalk.
2,500 lineal feet of cement curb and gutter.
2,000 lineal feet of re-laying stone curb and placing new cement gutter.

Placing storm sewer under Main street, and grading street.

Plans and specifications can be seen at the office of the Town Clerk, Cambridge City, Ind., or at the office of Chas. Brossmann, Consulting Engineer, Union Trust Building, Indianapolis, Ind.

Each bid must be accompanied by a certified check for 5 per cent. of amount of bid as a guarantee of good faith.

F. W. DIRK,

Town Clerk.

CHAS. BROSSMANN,
Engineer, Indianapolis, Ind.

(22)

FURNISHING CAST-IRON PIPE

Change of Date

Office of the Board of Contract and Supply,
Syracuse, N. Y., May 19, 1908.

Sealed proposals will be received at the office of the Board of Contract and Supply until 1:30 p. m., Monday, June 1, 1908, for furnishing cast iron pipe for the conduit line from Skaneateles Lake to and into the City of Syracuse, in accordance with the plans and specifications on file in the office of the City Engineer. A certified check for five thousand (\$5,000) dollars, for each 5,000 ton lot of pipe, payable to the order of J. D. Stemmler, City Treasurer, to be forfeited upon failure to enter into contract within five days' notice of award from the Secretary of this Board, must accompany each proposal. (21) FREDERICK T. PIERSON, Secretary.

BRIDGES AND SEWERS.

Department of Public Works,
Bureau of Surveys, Office 412 City Hall.
Philadelphia, Pa., May 13, 1908.

Sealed proposals, endorsed "Bids for Bridges and Main Sewers," and addressed to the undersigned, at the office above mentioned, will be received until 12 o'clock, noon, on June 3, 1908, for
Schedule A. Bridges.
Schedule B. Main Sewers.

Plans for the above work will be exhibited in the office of Bureau of Surveys, Philadelphia.

Specifications and blank forms upon which bids must be made, will be furnished upon application to the Chief Engineer, Room 416 City Hall.

Bidders must be skilled and regularly engaged in the class of work bid for.

No bid will be considered unless accompanied by a certificate from the City Solicitor that the provisions of an ordinance requiring proposal bonds when the bids exceed in amount five hundred dollars, approved May 25, 1860 (p. 81, West), have been complied with.

The Director reserves to himself the right to reject any or all bids, as he may deem best for the interests of the city.

GEORGE R. STEARNS,
Director.

AQUEDUCT

Board of Public Works,
Los Angeles, Cal., May 15, 1908.

Sealed proposals will be received at the office of the Board of Public Works, July Seventeen, 1908, for the construction of the Jawbone Division of the Los Angeles Aqueduct, with a capacity of four hundred second feet, including about forty-three thousand lineal feet of lined tunnel, sixty thousand lineal feet of lined conduit, and three hundred forty thousand cubic yards of excavation. The work is subdivided into three sections, and separate or lump sum proposals will be received. Plans and specifications may be obtained from the Board.

HORACE B. FERRIS,
Secretary.

PAVING, CURB AND GUTTER

Johnson City, Tenn.

Sealed proposals will be received by the Recorder of Johnson City, Tenn., until 4:00 o'clock p.m., June 18, for the paving of Improvement Districts 1, 2 and 3, under provisions of Chapter 276 of the Acts of 1907, and one block on Main street, approximately 21,000 yards, and 6,100 lineal feet of concrete curb or curb and gutter, according to plans and specifications in office of City Engineer. Certified check or approved bond for \$1,000 shall accompany each bid. City reserves right to reject any and all bids. Bids will be opened by the Council at 7:30 p.m., June 18th, in open session. Payments in three improvement districts to be made 40 per cent. cash and 60 per cent. in certificates of indebtedness, as the work progresses, and Main street to be paid in cash as the work progresses.

E. E. ELLSWORTH,
Recorder.

L. N. WILSON,
City Engineer.

(22-23)

REINFORCED CONCRETE SEWER

Notice to Contractors

Sealed proposals will be received by the Board of Public Works at the office of the City Clerk of the City of Iron Mountain, Michigan, up to 1 o'clock p. m. June 12, 1908, for the construction and laying of a reinforced concrete sewer, 48 inches in inside diameter, length 2,896 feet.

Plans and specifications for the above may be seen at the office of the City Clerk of said city.

Each proposal must be accompanied with a certified check of \$500.00, payable to the Chairman of the Board of Public Works, which will be returned upon the execution of the contract.

Proposals must be presented in a sealed envelope directed to the City Clerk and endorsed "Sewer Bids."

The right is reserved to reject any or all bids.

JOHN B. CALVI,
(21-22) City Clerk.

CONCRETE SEWER

Peru, Ind.

Sealed bids will be received at 7:30 p.m. June 5, 1908, for the construction of an 8-foot concrete sewer, to cost approximately \$18,245.50.

Plans and specifications are on file with the Town Clerk.

GEORGE F. MERLEY,

Town Clerk.

PAVING, SEWERAGE, CURBING

Belleville, Ill., May 21, 1908.

On June 3, 1908, at 3 o'clock in the afternoon, the Board of Local Improvements of the City of Belleville, Illinois, will open bids and on the same day award contracts for 60,000 square yards of vitrified brick street paving, including 20,000 feet of sewering and 40,000 lineal feet of curbing. The specifications are on file in the City Engineer's office, at the City Hall.

FRED J. KERN,

Mayor and ex-Officio President

(22) of the Board of Local Improvements.

FURNISHING CAST IRON PIPE

Office, Commissioners, District of Columbia.
Washington, May 15, 1908.

Sealed proposals will be received at this office until 12 o'clock M., Saturday, June 6, 1908, for furnishing cast-iron water pipe. Forms, specifications and necessary information may be obtained at room 43, District Building, Washington, D. C. Henry B. F. Macfarland, Henry L. West, Jay J. Morrow, Commissioners, D. C.

WANTS

POSITION WANTED by a municipal engineer; technical education and twelve years' practical experience in paving, sewers and municipal improvements; best of references; 33 years; American. E. H. S., care Municipal Journal and Engineer. (21-24)

TWELVE offices, covering entire field of municipal and public work; positions open in engineering, drafting and office work; information free; write us to-day. Hapgoods, 305 Broadway, New York, or 1010 Hartford Bldg., Chicago.

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